# PROJECT MANAGEMENT PLAN FOR REMOVAL ACTION

## Red Hook Ball Fields 5, 6, 7, and 8
## 98 Lorraine Street
## Block 581, Lot 1
## Brooklyn, New York

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Prepared for:
**United States Environmental Protection Agency Region 2**
**Emergency and Remedial Response Division**
2890 Woodbridge Avenue, MS-211
Edison, NJ 08837

Prepared on behalf of:
**The City of New York Department of Parks and Recreation**
Olmsted Center
Flushing Meadows Corona Park
Flushing, NY 11368

Prepared by:
**TRC Engineers, Inc.**
1430 Broadway, 10th Floor
New York, New York 10018
TRC Project No. 246184

**JULY 6, 2016**

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# 1. Introduction

This Project Management Plan (PMP) has been prepared to describe the management structure for the implementation of the Removal Action Work Plan (RAWP) at Red Hook Ball Fields 5 through 8, as required by Article VIII Paragraph 26 of the Administrative Settlement Agreement and Order on Consent for a Removal Action (EPA Index No. CERCLA 02-2016-2010), referred to henceforth as "the Order," between the United States Environmental Protection Agency (EPA) and the City of New York Department of Parks and Recreation (DPR). This PMP will be revised within seven (7) days of assignment and/or reassignment of any roles and responsibilities discussed below.

## 1.1 Site Location, History and Description

The Site is located south of Lorraine Street, east of Hicks Street, north of Bay Street, and west of Henry Street in Brooklyn, New York and consists of Ball Fields 5 through 8 overlain with Soccer Field 7 and the Ball Fields 5 through 8 planting strips, which are part of the Red Hook Recreation Area. Figure 1 presents a Site Location Map and Figure 2 presents the Red Hook Recreation Area. The Site consists of a 4.17-acre portion of the Red Hook Recreation Area, a 58-acre park. The Site is designated as Block 581, Lot 1. The Order on Consent requires a removal action at Ball Fields 5 through 8 (as well as Ball Field 9, which will be addressed during a separate phase of the removal action as discussed below) and extends to the curb lines of the sidewalks surrounding the ball fields. The former Columbia Smelting & Refining Works (Columbia) facility was historically located within Ball Field 7 (northwest corner of the Site).

According to EPA, the Site was occupied by smelting and refining companies from the late 1920s through the late 1930s, including Delevan Smelting & Refining Co. in the late 1920s and Columbia Smelting & Refining Works from at least 1931 through the late 1930s. The Site was developed with a single-story, approximately 14,000-square foot building from the mid to late 1920s, which was razed prior to 1940. A 1931 advertisement in the Standard Metal Directory for Columbia Smelting & Refining Works, Inc. of 98 to 107 Lorraine Street indicated that the company used white metals and alloys as well as brass and bronze ingots. The advertisement indicated that the company manufactured soft lead, antimonial lead, Babbitts, solder, type metals, terse metal, Britannia metal, die-cast metal, unbreakable metal, and rerun zinc; consumed pig percentage metal, cable lead, battery plates, soft lead, type metals, Babbitt, joists, pewter and dresses; and dealt in pig tin, pig lead, copper, antimony, aluminum, spelter, scrap metals and residues. A 1938 Sanborn map indicated that eight furnaces were present in the former on-site building, and that the building was utilized as a refinery.

Since demolition of the historic Site building in the late 1930s, the Site has been utilized as a park and/or ball fields dating back to the early 1940s.

Soil sampling was conducted at the Site and its surroundings by EPA and its contractor, Weston Solutions, Inc. The DPR report titled "Red Hook Park Superfund Soil Sampling 2014-2015 Field Reports and Contaminant Results" dated July 30, 2015 (Soil Sampling Report) was prepared to summarize the results of soil sampling conducted by EPA. The sampling included the Red Hook Houses, Ball Fields 5 through 8 and 9, Soccer Fields 1, 2 and 6, and limited areas within Soccer Field 3, west of Red Hook Pool and north of Soccer Field 3 along Bay Street. The sampling was conducted in October 2014, March 2015, and April 2015. Lead, antimony, arsenic, iron and/or cadmium were detected at levels above New York State Department of Environmental Conservation (NYSDEC) Restricted Residential Use Soil Cleanup Objectives (RRUSCOs) and above EPA Removal Management Levels (RMLs) in soil samples collected from zero to two feet below ground surface (bgs) in the majority of the sample locations. EPA's analysis of the soil sampling results indicated that the contaminants present within Ball Fields 5, 6, 7, 8 and 9 are the result of a release from the historic Columbia facility. EPA determined that a removal action is required in these areas.

Pursuant to the Order, DPR will conduct the removal action under EPA oversight. The purpose of the removal action is to mitigate the threats posed by Site-related contaminants to public health or welfare. As indicated within Article VIII, Paragraph 23 of the Order, the removal action will include placement of at least 12 inches of material or alternate cover approved by EPA over contaminated soil left in place, which requires significant engineering and construction efforts. The removal action will be staggered in that the placement of cover over Ball Fields 5 through 8 will occur first, and when these fields are re-opened for use, placement of cover over Ball Field 9 will occur. There will be separate plans for each of the two phases of work. This PMP pertains to Ball Fields 5 through 8.

### 1.2 Purpose and Organization of the Project Management Plan

This PMP has been prepared to describe the management structure for the implementation of the RAWP. This PMP is organized into four (4) sections as follows:

- **Section 1: Introduction** – Presents the purpose of the Project Management Plan, description and history of the Site and the Project Management Plan Organization.
- **Section 2: Removal Action Project Management Structure** – Discusses the components, management approach, phasing, and contracting approach to implementing the RAWP.
- **Section 3: Roles and Responsibilities** – Presents the proposed TRC and subcontractor staff and brief descriptions of their qualifications.
- **Section 4: References** – Identifies the references used in the preparation of this PMP.

## 2. Removal Action Project Management Structure

### 2.1 Components of Removal Action Work Plan

This PMP presents the management structure required for the preparation, submission to EPA, and implementation of the following components of the RAWP in accordance with Article VIII Paragraph 26 of the Order:

1) Interim Design Plan for Ball Fields 5 through 8 and the Ball Fields 5 through 8 Planting Strips (Interim Design Plan);
2) Design and Implementation Plan for Ball Fields 5 through 8 and the Ball Fields 5 through 8 Planting Strips (Design and Implementation Plan); and
3) Construction Plan for Ball Fields 5 through 8 and the Ball Fields 5 through 8 Planting Strips (Construction Plan).

These documents will be prepared and submitted for EPA approval sequentially. In addition, the following deliverables are required under Article VIII of the Order:

1) Health and Safety Plans (HASPs) for both pre-construction and construction activities;
2) Quality Assurance Project Plan (QAPP);
3) Community Involvement Plan (CIP);
4) Post-Removal Site Control Site Management Plan (SMP);
5) Monthly Progress Reports;
6) Construction Completion Report (CCR); and

7) Final Report.

A brief description of each deliverable is presented below. Submission schedules, based on the requirements of the Order, are presented in Section 2.2.11.

## 2.2 RAWP Deliverables and Additional Deliverables

### *2.2.1 Interim Design Plan for Ball Fields 5 through 8 and the Ball Fields 5 through 8 Planting Strips*

The Interim Design Plan will document actions taken, and actions which DPR will continue to take until the removal action is completed, to fulfill the requirements of Paragraph 23(a) through (c) of the Order, including:

1) Restriction of public access to Ball Fields 5 through 8 and the associated Planting Strips;
2) Post information pertaining to the closure of the fields at each entrance of Ball Fields 5 through 8; and
3) Maintain adequate vegetative cover over all grassy areas of Ball Fields 5 through 8 and associated Planting Strips to reduce the presence of bare soil in these areas and therefore reduce the potential for exposure to, and migration of, contaminants from these areas.

The Interim Design Plan will include an inspection and maintenance schedule, along with report and checklist templates, to document compliance with the above-listed requirements, as well as a contingency plan to be enacted following a change in Site conditions or a significant disturbance. Additionally, the Interim Design Plan will include a conceptual approach to fulfilling the cover remedy requirements of Paragraph 23(d) of the Order, as well as a general schedule for completion of the removal action at Ball Fields 5 through 8.

### *2.2.2 Design and Implementation Plan for Ball Fields 5 through 8 and Planting Strips*

The Design and Implementation Plan will provide a detailed design for the implementation of work activities to fulfill the cover remedy requirements of Paragraph 23(d) of the Order. The Design and Implementation Plan will include the following draft documents for Ball Fields 5 through 8:

1) Specifications;
2) Removal Action Design;
3) Restoration Design;
4) Construction Quality Assurance/Quality Control (QA/QC) Plan;
5) Construction Schedule (including mobilization and restoration);
6) Equipment and Materials Staging Plan;
7) Equipment Decontamination and Waste Disposal Procedures;
8) Site Security Plan;
9) Traffic Control Plan;
10) Environmental Monitoring Plan; and
11) Waste Transportation and Disposal Plan.

### *2.2.3 Construction Plan for Ball Fields 5 through 8 and Planting Strips*

The Construction Plan will provide details of how the cover remedy will be installed. The Construction Plan will include detailed descriptions of logistics required to complete the work and final versions of the documents listed in Section 2.2.2.

### *2.2.4 Health and Safety Plan (HASP)*

A pre-construction HASP was prepared and submitted to and approved by the EPA in March 2016. A construction HASP will be prepared and submitted to the EPA for review and approval. The HASPs will be prepared in accordance EPA guidance and OSHA regulations. The HASPs will describe activities to be performed to protect on-Site personnel and area residents from physical, chemical, and other hazards expected to be encountered during implementation of the RAWP and subsequent activities.

### *2.2.5 Quality Assurance Project Plan (QAPP)*

The QAPP will be prepared in accordance with EPA Uniform Federal Policy for QAPPs and will address sample analysis and data handling through all stages of implementing the RAWP. The QAPP will include a detailed description of TRC's quality assurance, quality control, and chain of custody procedures that will be followed for design, compliance, and performance and effectiveness monitoring sampling. Sample collection and analysis performed during implementation of the RAWP, and subsequent activities, will conform to applicable provisions of the QAPP.

### *2.2.6 Community Involvement Plan (CIP)*

EPA has the lead responsibility for developing and implementing the CIP for this Site. If requested by EPA, TRC and DPR shall support certain EPA community involvement activities. All community involvement activities conducted by TRC and DPR at EPA's request are subject to EPA's oversight.

### *2.2.7 Post-Removal Site Control Site Management Plan (SMP)*

Post-Removal Site Control will be accomplished by preparing and implementing a SMP and establishing a restrictive covenant for the Site. The SMP will be prepared in accordance with NYSDEC requirements and approved by the NYSDEC. DPR will enter into a restrictive covenant for the Site which will enforce the procedures described in the SMP. The SMP will be implemented at the time of construction completion, to prevent exposure to hazardous substances which are left in place at the Site. This includes scheduled monitoring and maintenance, as appropriate, of the removal action at the Site and periodic certification of the effectiveness of all Engineering and Institutional Controls which have been, are being, or are planned to be, employed at the Site.

### *2.2.8 Monthly Progress Reports*

Commencing with the month following EPA's approval of the RAWP, and until EPA approves the Construction Completion Report (refer to Section 2.2.9 below), TRC will submit progress reports to EPA on a monthly basis. The reports will describe the activities completed during the prior reporting period.

### *2.2.9 Construction Completion Report (CCR)*

After completion of implementation of the RAWP, DPR will submit a CCR, prepared in accordance with Article VIII Paragraph 33 of the Order, requesting EPA's determination that construction has been completed. The CCR will include a demonstration, and supporting documentation, that implementation of the RAWP is complete and that the Post-Removal Site Controls are functioning properly and as designed. The CCR will include as-built drawings signed and stamped by a registered professional engineer and will be prepared in accordance with site-specific cleanup guidance and methods.

### *2.2.10 Final Report*

Subsequent to receipt of EPA's notification, in accordance with Article XXVI Paragraph 96, that all work required under the Order has been completed, DPR will submit a final report in accordance with the

requirements of Article VIII Paragraph 34 of the Order, including Section 300.165 of the National Contingency Plan.

### *2.2.11 Schedule*

| Item No. | Description of Deliverable, Task | Included Supporting Deliverable | Deadline |
|---|---|---|---|
| **Remedial Action Work Plan** | | | |
| 1 | Project Management Plan | | 60 days after the Effective Date of the Order |
| 2 | Interim Design Plan | 1) Inspection and Maintenance Summary and Schedule and Contingency Plan<br>2) RAWP Conceptual Approach and Schedule | 1) Seven (7) days after the Effective Date of the Order<br><br>2) 90 days after the Effective Date of the Order |
| 3 | Design and Implementation Plan | Draft versions of:<br>1) Specifications;<br>2) Removal Action Design;<br>3) Restoration Design;<br>4) Construction QA/QC Plan;<br>5) Construction Schedule;<br>6) Equipment and Materials Staging Plan;<br>7) Decontamination and Waste Disposal Procedures;<br>8) Site Security Plan;<br>9) Traffic Control Plan;<br>10) Environmental Monitoring Plan; and<br>11) Waste Transportation and Disposal Plan. | 240 days after EPA approval of the Interim Design Plan |
| 4 | Construction Plan | Final versions of the above-listed deliverables | 240 days after EPA approval of the Design and Implementation Plan |
| **Additional Deliverables** | | | |
| 5 | Pre-Construction Health and Safety Plan | | 60 days after the Effective Date of the Order; Submitted to and approved by the EPA in March 2016 |
| 6 | Construction Health and Safety Plan | | 270 days after EPA approval of the Design and Implementation Plan |
| 7 | Community Involvement Plan | | To be prepared by EPA |
| 8 | QAPP | | Prior to sampling activities |
| 9 | Post-Removal Site Control Site Management Plan | | In accordance with Removal Action schedule or as otherwise directed by EPA |
| 10 | Progress Reports | | Monthly or as otherwise directed by EPA |
| 11 | Construction Completion Report | | Upon construction completion |
| 12 | Final Report | | 60 days after receipt of EPA's notification of completion |

## 3. Roles and Responsibilities

The implementation of the RAWP is being supervised by Emergency and Remedial Response Division of the EPA. The EPA On-Scene Coordinator is Ms. Margaret Gregor.

The DPR Project Coordinator, Ms. Mary Salig, is responsible for the overall completion of the project and is the point of contact for the EPA. This includes the following duties:

- Maintain communication and correspondence with EPA;
- Be knowledgeable at all times about all matters relating to the work being performed under the Order;
- Confirm that all Work requiring certification by a professional engineer licensed in the State of New York shall be reviewed and certified by such;
- Notify EPA of any proposed substantive changes to the approved RAWP; and
- Be present on-site or readily available for EPA to contact during implementation of work being performed under the Order.

The overall management structure for implementing the RAWP is shown on the Project Team Organizational Chart presented in Appendix A.

### 3.1 RAWP Preparation and Park Design

The DPR Design Project Manager, Ms. Imelda Bernstein, is responsible for managing the design of the ball fields and landscaping of the park. Ms. Bernstein will review all design related deliverables. The DPR's Director of Environmental Remediation, Ms. Kay Zias, is responsible for the management and oversight of TRC with respect to the removal action components of the project. Ms. Zias will review all removal action deliverables. Resumes of key DPR staff were previously submitted for approval by EPA, TRC and subcontractor staff resumes are presented in Appendix B. Subcontractor qualifications are presented in Appendix C.

TRC is responsible for the engineering and design of the Removal Action for Ball Fields 5 through 8 and surrounding planting strips, including the performance pre-design investigations, ball field design, and preparation of the Removal Action Work Plan, Pre-Construction Health and Safety Plan, Quality Assurance Project Plan, Monthly Progress Reports, Post-Removal Site Control Site Management Plan (SMP), Construction Completion Report and Final Report. A description of key TRC personnel and subcontractors and responsibilities is provided below.

- TRC PROGRAM MANAGER will be the main TRC contact for the project and will be responsible for ensuring that the project is being implemented in accordance with the EPA-approved RAWP. The TRC Program Manager is responsible for ensuring that practices, policies, objectives and procedures are communicated to, and understood, implemented, and adhered to by all personnel. The TRC Program Manager will be the focal point for contact with DPR and the EPA On-Scene Coordinator and other regulatory personnel, and will be directly supported by the TRC Project Manager, Field Team Manager, the TRC Quality Assurance (QA) Manager, and where appropriate, the Laboratory Manager and/or the Laboratory QA Manager. Ms. Jennifer Miranda will serve as the TRC Program Manager for the project.
- TRC SENIOR TECHNICAL ADVISOR/REMEDIAL ENGINEER will provide technical supervision for the design and implementation of the cover remedy required in Paragraph 23(d) of the Order. Mr. James Peronto, PE, LEED AP will serve as the primary Technical Advisor/Remedial Engineer. Mr. Peronto will review all Removal Action deliverables, conduct inspections of the remedy construction, and sign and stamp applicable remedial design drawings and the final Construction Completion Report.

- TRC PROJECT MANAGER will ensure that all the technical, administrative, and regulatory compliance objectives are met on a day-to-day basis. The TRC Project Manager will regularly interface with the Program Manager, Remedial Engineer, and Field Team Manager. The TRC Project Manager will serve as a secondary liaison to DPR, EPA and other regulatory personnel, in support of the TRC Program Manager. The TRC Project Manager will be responsible for the successful completion of the project (in terms of budget, schedule, data quality objectives, etc.), coordinating with technical task leaders, interpreting site data, and providing input into the development and finalization of key technical deliverables. Mr. Wes Lindemuth, CHMM, CSP will serve as the TRC Project Manager.
- TRC QUALITY ASSURANCE (QA) MANAGER will ensure that the QAPP is properly implemented. Where QA or quality control (QC) issues arise, the TRC QA Manager will be contacted by the Project Manager, Field Team Manager or Laboratory QA Manager, depending on the nature of the issue, for guidance and resolution. The TRC QA Manager will report directly to the TRC Project Coordinator and will remain independent from all data generators and users. Ms. Elizabeth Denly will serve as the TRC QA Manager for this project.
- TRC STORMWATER ENGINEER will provide technical supervision for the design and implementation of the stormwater drainage components of the design. Mr. Ralph Peragine, PE will serve as the TRC Stormwater Engineer and sign and stamp associated design drawings.
- TRC FIELD TEAM MANAGER AND PROJECT ENGINEER will be responsible for overseeing pre-design field activities on a day-to-day basis. The TRC Field Team Manager will ensure that all field work is conducted in accordance with approved work plans to meet overall project quality objectives. Should potential issues arise, the TRC Field Team Manager will contact the TRC Project Manager or TRC QA Manager, as appropriate. The Project Engineer will also oversee remedial construction activities as a designated representative of the Remedial Engineer. Ms. Kirsten Myers, PE will serve as the TRC Field Team Manager and Project Engineer.
- TRC HEALTH AND SAFETY OFFICER will be responsible for ensuring all field activities are being implemented in accordance with the Health & Safety Plan and when necessary, evaluating new hazards and operation changes. The TRC Health and Safety Officer has the authority to direct corrective action of noncompliance situations immediately and to stop work in cases that could put health and safety at risk. Jack Springston, CIH, CSP will serve as the TRC Health and Safety Officer.
- TRC ENVIRONMENTAL SCIENTISTS/GEOLOGISTS will be responsible for performing field activities in accordance with the approved work plans on a day-to-day basis. Should potential issues arise, these technical specialists will contact the TRC Field Team Manager or TRC Project Manager, as appropriate.
- ABB LANDSCAPE ARCHITECTURE are responsible for preparing the landscape designs and specifications. Mr. John Butz, RLA will served as the lead designer, Mr. Peter Crawford, RLA will serve as the project manager, and Ms. Slavica Mickovic, RLA, ISA will serve as the arborist for ABB's services. The landscape design drawings will be signed and stamped by Mr. Butz.
- GEOTECHNICAL ENGINEER is responsible for preparing a geotechnical engineering report in support of the design of the Site cover remedy, stormwater drainage, synthetic turf fields, retaining walls, and other park features. TRC will subcontract geotechnical engineering services to Oweis Engineering, Inc.
- MECHANICAL/ELECTRICAL/PLUMBING ENGINEERING for design and installation of water supply for irrigation and drinking water will be subcontracted by TRC to DVL Consulting Engineers, Inc.

- LAND SURVEYOR is responsible for supplying all services (including labor), equipment, and material required to perform surveys of the Site, physical features, and sampling locations. TRC will subcontract land surveying services to Munoz Engineering and Land Surveying, P.C. A Munoz Professional Land Surveyor will be responsible for signing and stamping the site topographic survey drawing.
- ANALYTICAL LABORATORY is responsible for analyzing samples and reporting results in accordance with the QAPP for the removal action. The staff of the analytical laboratory will include a laboratory manager and quality assurance manager to ensure that the laboratory follows the laboratory QAPP and all laboratory standard operating procedures (SOPs). TRC will subcontract laboratory services to SGS Accutest.
- DRILLER (SUBCONTRACTOR) is responsible for drilling permits, licenses, clearances, and supplying all services (including labor), equipment, and material required to perform soil borings and install temporary groundwater wells, in addition to all maintenance and quality control of drilling work. The drilling subcontractor will be responsible for following decontamination and health and safety procedures specified in the HASP and QAPP. Upon completion of the work, the drilling subcontractor will be responsible for demobilizing all equipment and properly restoring boring locations. TRC will subcontract drilling services to Land Air Water Environmental Services, Inc. a New York State licensed Driller.

### 3.2 RAWP Implementation and Park Reconstruction

The DPR Construction Project Manager, Mr. Matthias Augustin (Brooklyn Capital Construction Director), will be responsible for managing the implementation of the RAWP and reconstruction of the park. The DPR Construction Project Manager will receive support from Ms. Kay Zias and Ms. Imelda Bernstein during the RAWP implementation and park reconstruction, respectively. The summary of the contractor and subcontractor roles and responsibilities and number of individual subcontractors is general in nature, and will be revised based on DPR's selected prime contractor within seven (7) days of any addition or deletion. All contractor and subcontractors will be required to perform work in accordance with design specifications as well as decontamination, health and safety, site security, and waste disposal procedures specified in the RAWP, HASP, and in the bid package. Additionally, contractor and subcontractors will be responsible for all maintenance and quality control of construction, mobilizing and demobilizing all equipment, site security, and preparing and providing as-built drawings among other requirements outlined in the Design and Implementation Plan. The prime contractor will be selected by DPR through a competitive bidding process.

- PRIME CONTRACTOR (TBD) will be directly hired by DPR and will be responsible for permits, licenses, clearances, and supplying all services (including labor), equipment, and material required for the overall implementation of the RAWP and reconstruction of the park. In addition, the prime contractor will be responsible for hiring and managing subcontractors to meet all requirements of the bid package.
    - SITE FEATURE REMOVAL SUBCONTRACTOR (TBD) may be directly hired by Prime Contractor and will be responsible for permits, licenses, clearances, and supplying all services (including labor), equipment, and material required to remove the site features to allow for installation of the cover remedy.
    - COVER REMEDY INSTALLATION SUBCONTRACTOR (TBD) may be directly hired by Prime Contractor and will be responsible for permits, licenses, clearances, and supplying all services (including labor), equipment, and material required to install the proposed covers including synthetic turf.

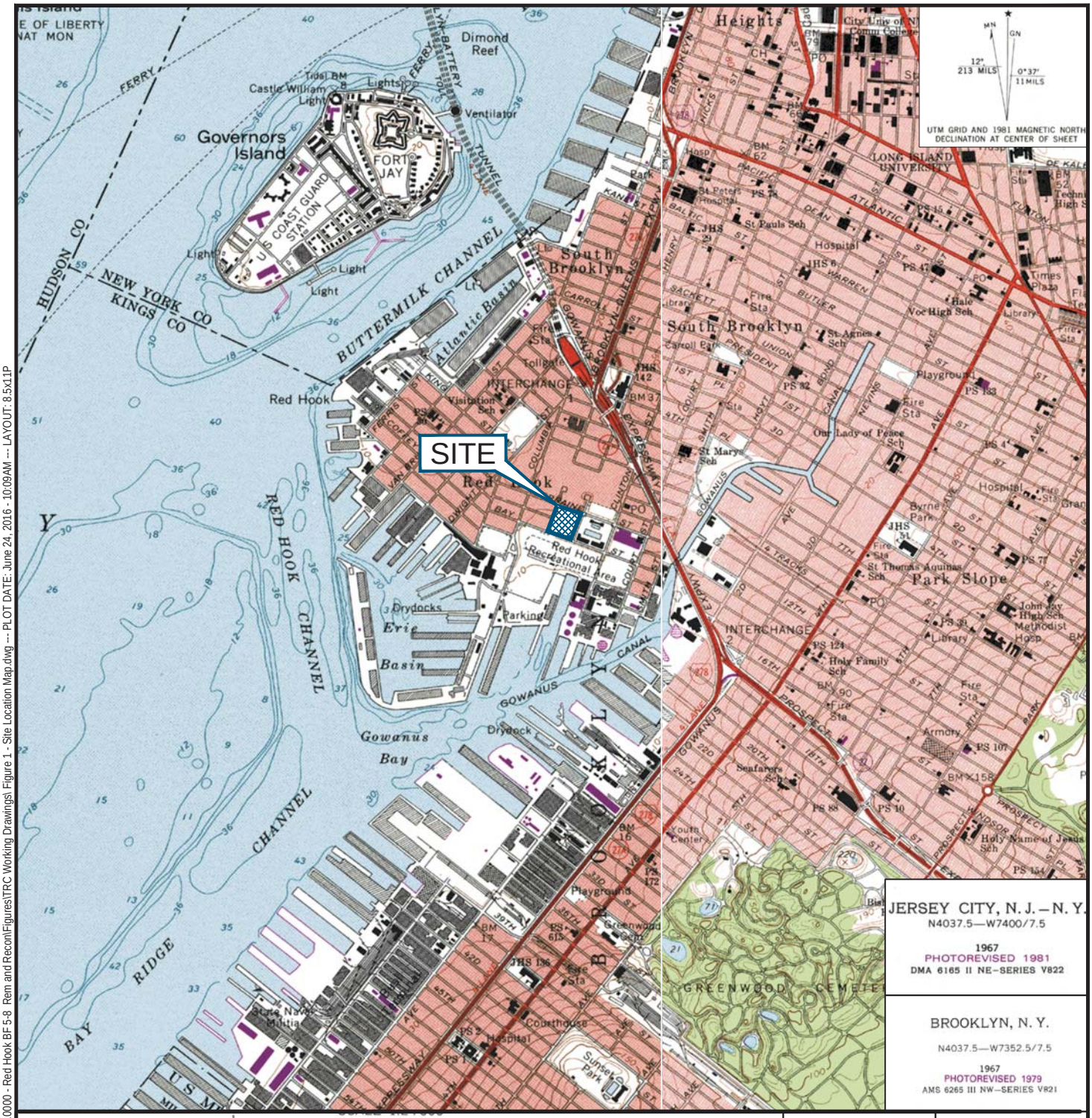
- PARK RECONSTRUCTION SUBCONTRACTOR (TBD) may be directly hired by Prime Contractor and will be responsible for permits, licenses, clearances, and supplying all services (including labor), equipment, and material required to reinstall utilities and park features.

- THIRD PARTY ENVIRONMENTAL, HEALTH AND SAFETY OVERSIGHT will be responsible to ensure that the contractors follow decontamination, health and safety, and waste disposal procedures specified in the RAWP, HASP, and in the bid package.
- THIRD PARTY RESIDENT ENGINEER will be responsible to ensure that the contractors follow design specifications and meet all design requirements included in the bid package.
- TRC STAFF will prepare a Construction Completion Report in accordance with Article VIII Paragraph 33 of the Order and Section 2.2.9 of this PMP, requesting EPA's determination that the removal action construction has been completed in accordance with the Order and RAWP.

### 3.3 Post-Removal Site Control Management Plan Monitoring, Maintenance and Reporting

Following EPA approval of the Construction Completion Report, two DPR Units will be responsible for the maintenance and operation of the park. The DPR Brooklyn Maintenance and Operations Unit will perform routine monitoring, maintenance and reporting required by the SMP. The DPR Emergency Response Unit will respond to emergencies at the park and may assist the Maintenance and Operations Unit during their operations.

**FIGURES**

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PROJECT:
**CITY OF NEW YORK PARKS AND RECREATION - CAPITAL PROJECTS DIVISION**
**RED HOOK PARK: BALL FIELDS 5, 6, 7 AND 8**
**BOROUGH OF BROOKLYN, NEW YORK**

TITLE:
# SITE LOCATION MAP

| | |
|---|---|
| DRAWN BY: | HD |
| CHECKED BY: | WL |
| APPROVED BY: | JM |
| DATE: | JUNE 2016 |
| PROJ. NO.: | 246184.0000.0000 |
| FILE: | Figure 1 - Site Location Map.dwg |

**FIGURE 1**

8.5x11 --- ATTACHED XREFS: --- ATTACHED IMAGES: BROOKLYN, JERSEY CITY:
DRAWING NAME: i:\Projects\NYC Parks Contract 2016\246200181\246184.0000 - Red Hook BF 5-8 Rem and Recon\Figures\TRC Working Drawings\ Figure 1 - Site Location Map.dwg --- PLOT DATE: June 24, 2016 - 10:09AM --- LAYOUT: 8.5x11P


LEGEND:

- SITE BOUNDARY
- RED HOOK RECREATION AREA BOUNDARY

BF = BALL FIELD

NOTES:

SOURCE:
GOOGLE EARTH PRO

0 200' 400'

SCALE: 1"=200'
SHEET SIZE: 11" X 17"

PROJECT:
**CITY OF NEW YORK PARKS AND RECREATION - CAPITAL PROJECTS DIVISION**
**RED HOOK PARK: BALL FIELDS 5, 6, 7, AND 8**
**BOROUGH OF BROOKLYN, NEW YORK**

TITLE:
## RED HOOK RECREATION AREA

| | | | |
|---|---|---|---|
| DRAWN BY: | HD | PROJ NO.: | 246184.0000.0000 |
| CHECKED BY: | WL | | |
| APPROVED BY: | JM | | **FIGURE 2** |
| DATE: | JUNE 2016 | | |


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FILE NO.: Figure 2 - Red Hook Recreation Area.dwg

11x17 --- ATTACHED XREFS: --- ATTACHED IMAGES: GEPro Image (3000ft), Weston Figure 2 - Sample Locations Map;
DRAWING NAME: I:\Projects\NYC Parks Contract 2016\20018\246184.0000 - Red Hook BF 5-8 Rem and Recon\Figures\TRC Working Drawings\ Figure 2 - Red Hook Recreation Area.dwg --- PLOT DATE: June 24, 2016 - 12:25PM --- LAYOUT: 11X17L

# APPENDIX A

## PROJECT TEAM ORGANIZATIONAL CHART

NYC Parks

**USEPA REGIONAL PUBLIC LIAISON**
George Zachos

**USEPA ON-SCENE COORDINATOR**
Margaret Gregor

**USEPA COMMUNITY INVOLVEMENT COORDINATOR**
Natalie Loney

**DPR PROJECT COORDINATOR**
Mary Salig

**DPR DIRECTOR OF ENVIRONMENTAL REMEDIATION**
Kay Zias

**DPR DESIGN PROJECT MANAGER**
Imelda Bernstein, RLA

**POST-REMOVAL SITE MONITORING, MAINTENANCE AND REPORTING**
DPR Brooklyn Maintenance & Operations
DPR Emergency Response Unit

**DPR CONSTRUCTION PROJECT MANAGER**
Matthias Augustin

**TRC PROGRAM MANAGER**
Jennifer Miranda

**TRC SENIOR TECHNICAL ADVISOR / REMEDIAL ENGINEER**
James Peronto, PE, LEED AP

**THIRD PARTY RESIDENT ENGINEER**
TBD

**THIRD PARTY ENVIRONMENTAL, HEALTH & SAFETY OVERSIGHT**
TBD

**PRIME CONTRACTOR**
TBD

**TRC PROJECT MANAGER**
Wes Lindemuth, CSP, CHMM

**SITE FEATURE REMOVAL SUBCONTRACTOR**
TBD (AS REQUIRED)

**PARK RECONSTRUCTION SUBCONTRACTOR**
TBD (AS REQUIRED)

**COVER REMEDY INSTALLATION SUBCONTRACTOR**
TBD (AS REQUIRED)

**PRE-DESIGN INVESTIGATION**

**PARK DESIGN**

**REMOVAL ACTION WORK PLAN**

**TRC FIELD TEAM MANAGER AND PROJECT ENGINEER**
Kirsten Myers, PE

**TRC STORMWATER ENGINEER**
Ralph Peragine, PE

**SUBCONSULTANT**
Mechanical/Electrical/ Plumbing Engineering
DVL Consulting Engineers, Inc.

**TRC HEALTH & SAFETY OFFICER (HASP)**
Jack Springston, CIH, CSP

**TRC QUALITY ASSURANCE MANAGER (QAPP)**
Elizabeth Denly

**ADDITIONAL REPORTING AND PLANS**
TRC Staff

**SUBCONSULTANTS**

| Laboratory Services | Drilling Services | Geotechnical Engineer | Land Surveyors |
|---|---|---|---|
| SGS Accutest | Land, Air, Water Environmental Services, Inc. | Oweis Engineering Inc | Munoz Engineering & Land Surveying, P.C. |

**ABEL BAINNSON & BUTZ, LLP - LANDSCAPE ARCHITECTURE**

| Certified Arborist | Principal / Lead Designer | Project Manager |
|---|---|---|
| Slavica Mickovic, RLA, ISA | John Butz, RLA | Peter Crawford, RLA |

TRC
*Results you can rely on*

# Project Team Organizational Chart

# APPENDIX B

# KEY PROJECT STAFF RESUMES

# JENNIFER L. MIRANDA

## EDUCATION

M.S., Environmental and Occupational Health Science, Hunter College, 2002
National Institute of Environmental and Occupational Health Fellow 2002
B.S., Anthropology/ Biology, Human and Natural Ecology, Emory University, 1998

## PROFESSIONAL REGISTRATION/CERTIFICATIONS

Certified Asbestos Inspector, New York State Department of Labor

## AREAS OF EXPERTISE

Ms. Jennifer Miranda has over 15 years of experience and has assumed progressively increasing responsibility in environmental consulting and remedial construction management. Ms. Miranda serves as Senior Project Manager in TRC's New York office, in the Remediation Practice. Her qualifications include extensive planning, field investigation, work plan and report preparation, cost estimating, remedial construction management and project management. Ms. Miranda has served in the capacity of project manager for a number of large, complex and diverse environmental projects in New York City.

Ms. Miranda has project management and technical experience in the following areas:

- Remedial Investigation
- Remedial Construction Oversight
- Decommissioning/Demolition Services
- Pre-Demolition Hazardous Building Materials Surveys
- Environmental Assessments and Audits
- Environmental Health and Safety
- Environmental Compliance

## REPRESENTATIVE EXPERIENCE

**Queens West Development – Stage 2 Site – Long Island City, NY**

Ms. Miranda served as the Project Manager for the over $60 million remediation of the Queens West Development – Stage 2 Site, the site of a former oil refinery in Long Island City. In addition to the several historic abandoned underground storage tank systems, buried on the site was an extensive network of historic refinery piping. The Site was contaminated with petroleum-related VOCs and SVOCs, and metals, in several instances present in soil at concentrations above TCLP regulatory limits, and a large LNAPL plume. In connection with Operable Units 3 and 4 (OUs 3 and 4) (NYSDEC BCP Site Nos. C241095 and C241096), which consist of over 9 acres adjacent to the East River, since developed for primarily residential/public recreational use (including a waterfront park), Ms. Miranda was responsible for the preparation of the Remedial Investigation (RI) Work Plan, RI Report, Remedial Action Work Plan, Final Engineering Reports and Site Management Plans as well as Odor and Vapor Control and Enhanced Community Air Monitoring Plans. Ms. Miranda was also responsible for supervising

implementation of the work plans. The RI included advancement and sampling of hundreds of soil borings, installation and sampling of an extensive monitoring well network, soil gas sampling within the footprints of the planned buildings, sediment and surface water sampling in the East River to determine potential site impacts, locating and characterizing buried historic refinery remnants, a tidal influence study, a human health risk assessment and fish and wildlife impact analysis. Implementation of the remedial action work plan, supervised by Ms. Miranda, included high vacuum extraction of thousands of gallons of LNAPL, pre-excavation waste characterization and re-use sampling (over 250 borings and thousands of samples were collected for analysis), excavation of over 100,000 tons of contaminated soil under negative pressure enclosures (i.e., tents) and off-site disposal of excavated material, and post-remediation soil, groundwater and soil gas sampling. Ms. Miranda was responsible for financial management, investigation and construction phase field coordination and management, health and safety program management, daily and monthly reporting to the NYSDEC, community outreach program implementation and subcontractor procurement and management. Ms. Miranda served as a primary point of contact for nearby residents during the site remediation, presented at public meetings, prepared fact sheets for distribution to the public, and served as a primary point of contact with the NYSDEC and NYSDOH in connection with responding to local citizens' concerns. In addition, Ms. Miranda managed implementation of a chemical oxidation pilot test on the site, including preparation of a NYSDEC-approved pilot test work plan. In December 2010 NYSDEC issued the final Certificates of Completion for Operable Units 3 and 4 under the BCP.

**New York City Economic Development Corporation – On-Call Environmental Consulting Services Contract – New York, NY**

Ms. Miranda co-manages TRC's on-call environmental services contract with the New York City Economic Development Corporation (NYCEDC). Under Ms. Miranda's management, TRC has provided the following services to the NYCEDC: supplemental investigation work plans; lead investigation and dust removal; remedial oversight and management of a PCB release; asbestos surveys; in-situ soil characterization and specifications for reuse and disposal; semi-annual groundwater monitoring; annual inspections and periodic review reporting for NYSDEC VCP Site V00228, St. George Ball Park, Staten Island; remedial oversight and preparation of the site management plan and final engineering report for NYSDEC Environmental Restoration Site B000312, Bush Terminal Landfill Piers 1-4, Brooklyn; and indoor air quality monitoring and microbial sampling.

Under previous on-call contracts, Ms. Miranda managed several environmental site assessments and site investigations for NYCEDC. Ms. Miranda managed the large-scale Island-wide investigation of Governors Island in Upper New York Bay. Governors Island is the site of historic military and US Coast Guard operations.

**Engineering Services during Decommissioning: Charles Poletti Power Plant – Astoria, NY**

Ms. Miranda serves as the Project Manager for engineering during decommissioning of the Charles Poletti Power Plant. The Charles Poletti Power

Plant was a steam-electric 885 megawatt facility capable of firing natural gas and fuel oil. NYPA ceased operations at Poletti in January 2010. In June 2010, TRC was contracted to provide engineering services for the decommissioning of the Charles Poletti Power Plant. Decommissioning services provided to NYPA by TRC under Ms. Miranda's management have included an asbestos/regulated materials survey; coordination and oversight of asset recovery; pre-demolition structural assessment of adjoining buildings and cooling water intake and discharge structures; preparation of specifications and drawings for abatement, decommissioning, and demolition; and, preparation of an engineer's cost estimate and bid documents. In addition, Ms. Miranda managed bid phase services for the decommissioning and demolition project. Ms. Miranda also managed design services for temporary winterization of the Poletti Plant and for the relocation of electrical connections and procurement of a New Electric Fire Water Pump System. Ms. Miranda has served as the project manager during the construction phase including the following services: engineer of record, asbestos-abatement project monitoring and environmental and health and safety inspection services.

Ms. Miranda served as the project manager for characterization of sediment in support of upland disposal of material dredged from the former cooling water discharge canal as part of the decommissioning. The decommissioning activities include the removal of the sheet pile wall which forms the Cooling Water Discharge Canal in the East River. Excess sediment deposits within the Cooling Water Discharge Canal will be dredged in accordance with the Joint Application for Permit to the NYSDEC and the US Army Corps of Engineers (USACE). Ms. Miranda managed the preparation and implemented of a Field Sampling Plan (FSP) to characterize the material to be dredged for upland disposal. The FSP was prepared to meet the requirements of the NYSDEC Dredge Team and the New Jersey Department of Environmental Protection (NJDEP) Office of Dredging & Sediment Technology. Because of the limited boat access, a vibracore operator and crane were subcontracted to obtain the sediment samples from land. Global positioning system (GPS) readings were taken at the sample locations. A Sediment Sampling and Analysis Report was prepared for joint approval from the NYSDEC and NJDEP. Ms. Miranda is working with sediment disposal outlets in the region to gain acceptance of the material via barge for stabilization and ultimately upland disposal.

**New York City School Construction Authority – New York, NY**
Under TRC's on-call hazardous materials services contract with the New York City School Construction Authority, Ms. Miranda has served as project manager for several assignments. Responsibilities have included supervising the preparation of Phase I Environmental Site Assessment reports, preparation of a subsurface investigation summary report for a site with an active spill case, management of the preparation of Phase II Environmental Site Assessment reports, and focused regulatory agency database and prior report reviews for leased properties (over 50 leased New York City public school properties).

**Stewart EFI Facility - VCP Site No. V00691, Yonkers, NY**
Ms. Miranda served as Project Manager for the regulatory closure of a former

100,000-square foot metal stamping and electroplating facility site in Yonkers, New York (NYSDEC VCP Site No. V00691). Ms. Miranda served as the primary contact with the NYSDEC Project Manager and managed the implementation of the Supplemental Investigation and preparation of the Remedial Investigation and Remedial Alternatives Report, and the Site Management Plan. A release and covenant not to sue letter was issued by the NYSDEC for the site in October 2011.

**Sequa – Former Chromalloy Facility – State Superfund Site No. 344039, West Nyack, NY**
Ms. Miranda serves as Project Manager for the regulatory closure of the former metal coating facility in West Nyack, New York. The Site is undergoing remediation under the New York State (NYS) Inactive Hazardous Waste Disposal Site Remedial Program, administered by New York State Department of Environmental Conservation (NYSDEC). Ms. Miranda serves as the primary contact with the NYSDEC Project Manager and managed the preparation of the Interim Site Management Plan. Maintenance and monitoring of an existing remediation system is ongoing.

**Spectra Energy – Natural Gas Pipeline Project, Linden, NJ to New York, NY**
Ms. Miranda served as Manager for the construction dewatering permitting in Staten Island and Manhattan in support of the installation of the new natural gas pipeline. Ms. Miranda prepared permit applications which included treatment of dewatering fluids and discharge at ten temporary outfalls to wetlands and surface water bodies, obtained necessary permits and approvals, and administered the preparation of reports and termination of construction dewatering permits.

**The Port Authority of NY & NJ, Port Ivory Voluntary Cleanup Program Sites - VCP Site Nos. V00615, V00674, and V00675, Staten Island, NY**
Ms. Miranda assessed the regulatory status of three VCP Sites. The three Sites encompass approximately 123-acres in the Port Ivory area of Staten Island, New York. Ms. Miranda performed a file review, site visit and prepared summaries and flow charts for presentation to the NYSDEC case manager. Ms. Miranda presented the strategy at a meeting with the NYSDEC to achieve site closure/release and covenant not to sue for each Site. NYSDEC has approved closure of two of the sites under the VCP and the Remedial Action Work Plan for the third site is under review by the NYSDEC.

**SPECIALIZED TRAINING**

- OSHA 40-Hour Hazardous Waste Operations and Emergency Response
- OSHA 8-Hour Hazardous Waste Operations and Emergency Response Refresher
- OSHA 8-Hour Supervisor of Hazardous Waste Operations
- NYC Mayor's Office of Environmental Remediation (OER) Turbo-Training Gold Certified 2014
- Practical Applications in Hydrogeology, Rutgers University
- EPA's All Appropriate Inquiry Rule, National Brownfields Association
- USEPA Region 4 Standard Operating Procedures for Field Sampling
- Hazard Ranking System Training Course

# JAMES PERONTO, PE, LEP, LEED AP

## EDUCATION

M.S., Management, Environmental Management Concentration, Rensselaer-Hartford, 2001
B.S., Civil and Environmental Engineering, University of Wisconsin-Madison, 1984

## PROFESSIONAL REGISTRATIONS

Professional Engineer, Connecticut, (#16182), 1989
Professional Engineer, New York, (#083861), 2006
Licensed Environmental Professional, Connecticut, (#179), 1997
Leadership in Energy and Environmental Design Accredited Professional, GBCI, 2009

## AREAS OF EXPERTISE

Mr. James Peronto has over 27 years of experience encompassing:

- Environmental Compliance Plans and Permits
- Environmental Site Assessments
- Environmental Compliance Audits
- Remedial Investigations/Feasibility Studies
- Remedial/Corrective Action Oversight and Management

## REPRESENTATIVE EXPERIENCE

Mr. Peronto is a Principal Engineer at TRC where he is responsible for managing environmental investigations and studies which are required for the preparation of hazardous waste, wastewater, water resources, and stormwater compliance plans and permits and/or which are necessary to determine appropriate corrective actions for various properties, public and private facilities and institutions. He oversees and manages corrective action activities. His responsibilities have also included the development of technical specifications and design plans and the oversight of their implementation. He also has experience in providing community relations support for public meetings and hearings.

As a Principal Engineer, Mr. Peronto is also responsible for the development of applications and plans necessary for obtaining stormwater and wastewater discharge permits and associated water resources permits. This includes reviewing facility discharge conditions to evaluate permit eligibility and assisting facility operators in developing the submittals and plans required under the permit applications. Mr. Peronto has also been involved as a Project Manager in the development and implementation of environmental site investigation plans, including health and safety plans, quality assurance project management plans, and field sampling plans. In implementing these plans, Mr. Peronto's responsibilities have included the oversight of field activities to ensure adherence to established site safety procedures, project quality control criteria, and project protocols, plans, and specifications. Other related responsibilities include preparation of environmental investigation and remediation budgets and project schedules and managing projects within these limits. Mr. Peronto also has extensive experience in preparing bid documents, obtaining competitive bids from subcontractors, conducting bid evaluations, and completing subcontract agreements.

Prior to joining TRC, Mr. Peronto was employed as a Regional Project Manager (RPM) for the U.S. Environmental Protection Agency in the Region VI Hazardous Waste Division's Technical Section. Mr. Peronto's experience as an RPM included the management and oversight of federal contractors and state agencies involved in the performance of hazardous waste site investigations, feasibility studies, remedial designs, and remedial construction activities. This

experience included the development of project schedules and cost estimates for hazardous waste site remedial project activities. He was also responsible for the direction of work assignments for the performance of remedial investigations and feasibility studies for hazardous waste sites, risk assessments, and remedial design work plans for hazardous waste sites.

**New York City Economic Development Corporation, Environmental Consultant Retainer – New York, NY.** Project Manager for multiple retainer contracts with New York City Economic Development Corporation to provide on-call environmental consulting and engineering investigation, remediation, compliance, and permitting services for various City of New York properties and development projects. Work has included numerous environmental site investigations and the preparation of remediation system engineering plans and specifications, Stormwater Pollution Prevention Plans, Army Corps of Engineers wetlands permit applications, and Tank Closure Plans. Mr. Peronto has managed this retainer contract since 1989, which includes the performance of Phase I environmental site assessments and Phase II field investigations of city-owned industrial, commercial or residential properties for which development is planned. Work at over 150 sites has included numerous historical property background searches, field investigations, and cleanups/site closures. Mr. Peronto has conducted site investigations under the oversight of the NYCDEP and the NYSDEC. He has also investigated and remediated sites under both the Environmental Restoration/Brownfield Cleanup and Voluntary Cleanup Programs under NYSDEC oversight. He has prepared numerous work plans for environmental site investigations and remedial actions including sampling plans and health and safety plans.

Mr. Peronto manages remedial action activities at sites proposed or planned for development. Remedial activities have been conducted at many sites including former gasoline stations, junkyards, former industrial facilities, and abandoned disposal areas. Remedial site activities have included aboveground and underground storage tank removals, tank upgrades, soil removals, drum removals, waste removals, structure demolitions, and asbestos abatements. He prepares the specifications and bid packages, conducts the bid evaluations, retains the contractors, and manages remedial activities. Mr. Peronto develops project budgets and schedules and monitors activities to ensure adherence to limits. He reviews compliance with local, state and federal environmental laws and regulations during all activities.

**New York City Economic Development Corporation, Bush Terminal Railyard/Landfill/Piers, Environmental Investigations and Remedial Actions – Brooklyn, NY.** Mr. Peronto managed a detailed investigation of the 15-acre railyard in the Bush Terminal complex to assess reported buried waste and drum areas. Investigation activities included geophysical surveys, soil borings, test pit excavations, soil sampling and testing. He directed the remediation of buried drums, solid waste, and contaminated soils.

Mr. Peronto prepared the Site Investigation Work Plan for the investigation of a 17-acre landfill on the Bush Terminal complex between Piers 1 and 4. The site was investigated under the state Environmental Restoration/Brownfield Cleanup Program. The investigation activities included soil gas surveys, soil borings, ground water monitoring wells installation and sampling, and sediment and surface water sampling. Mr. Peronto prepared a Site Investigation Report that was approved by state agencies. He provided community relations assistance on this project by preparing fact sheets and making presentations at local community board meetings. Mr. Peronto assisted in the preparation a Remedial Alternatives Report that presents an analysis of remedial alternatives to address the remedial action objectives for a landfill site. Also, he oversaw the preparation of the Proposed Remedial Action Plan for the landfill site that presented the recommended remedial alternative for public review and comment. He assisted in the preparation of the Record of

Decision for the landfill project. Mr. Peronto worked very closely with state environmental and public health agencies throughout this program. He is currently managing the closure of the landfill which included the completion of several predesign studies and the preparation of the remediation technical specifications/drawings package. Predesign work and studies completed at the landfill include a dynamic compaction program over 9 acres, a pond sediment quality and tidal study, and a landfill gas migration study. He is also providing construction oversight services including submittal reviews and responses to contractor requests for information. He prepared the Community Air Monitoring Plan (CAMP) and Stormwater Pollution Prevention Plan (SWPPP) for approval by NYSDEC for the landfill closure construction project.

Mr. Peronto managed the removal of over 450 drums of grease, 20 drums of abandoned chemicals and waste, over 40 compressed gas cylinders, and over 300 tons of deteriorating bags of powdered boric acid from waterfront property and piers. He prepared the associated Remediation Work Plans, conducted waste characterization sampling and testing, prepared waste removal specifications and bid schedules, evaluated bids, and subcontracted all waste removal activities.

**New York City Economic Development Corporation, Former CSX Railyard/Ballpark at St. George Station, Environmental Investigations and Remedial Actions – Staten Island, NY.** Mr. Peronto managed the full environmental investigation and remediation of this former CSX railyard site and 52-acre waterfront property. Mr. Peronto prepared several site investigation and remediation plans and reports including a Health and Safety Plan and Remediation Work Plan that was approved by NYSDEC under the VCP. As part of the stadium development, he developed and negotiated final site-specific soil cleanup levels with NYSDEC and NYSDOH. Also, Mr. Peronto developed detailed specifications for Environmental Health and Safety and for Materials Management for the protection of site workers and the surrounding community and to assure proper management of site materials (e.g., soil, debris) during the construction activities. He prepared the Operation, Maintenance and Monitoring Plan for the completed remedial measures. Recently, he completed an annual PE inspection of the site and certification of the remedial activities for submittal to NYSDEC.

**Confidential Client, Manufacturing Facility Environmental Investigation Study – CT.** Mr. Peronto managed the field activities and provided technical support in the development of a report to investigate the potential impacts near the facility due to the discharge of pollutants to the adjacent stream. This initial investigation included a sediment quality study at and near the facility. The study also included a historical land use review of the site and the surrounding area to determine likely contaminant sources. Mr. Peronto assisted in the performance of a follow-up qualitative benthic invertebrate survey of the stream to further assess potential site-related impacts.

**Edwards & Kelcey/Slattery Skanska JV, MTA/LIRR East Side Access Project, Environmental Investigation and Construction Oversight, Arch Street Yard & Shop – Queens, NY.** Mr. Peronto managed environmental issues for the Design/Build team during the construction of the new maintenance building and railyard. This included the preparation of an Environmental Compliance Plan, Materials Management Plan, Waste Transportation Plan, and Health and Safety Plan for the construction activities. He directed the investigation and characterization of over 25,000 cubic yards of excess soils and construction/demolition debris generated during construction for offsite disposal/recycling. Mr. Peronto managed the conduct of soil and ground water investigations, asbestos and lead based paint surveys, noise surveys, and dust monitoring on the site prior to and during construction. He prepared the NYCDEP water discharge permit application for construction dewatering discharges to the NYC sanitary sewer

system. He prepared the notices and Stormwater Pollution Prevention Plans for the NYSDEC stormwater discharge general permits associated with construction and industrial activities. Mr. Peronto provided a regulatory compliance review of design drawings for a new underground storage tank for waste oil. He prepared monthly Environmental Status Reports during construction.

**U.S. Naval Education and Training Center (NETC), Remedial Investigation/ Feasibility Study (RI/FS) – Newport, RI.** Mr. Peronto managed the investigation of five sites including two landfills, two underground storage tank (UST) farms, and one former fire fighting training area. He prepared the site investigation Phase I and Phase II RI/FS Work Plans (field sampling plan, quality assurance project management plan, and health and safety plan), preparation of bid specification packages for subcontracting activities associated with the RI site investigations, including laboratory, drilling, excavation, soil gas, geophysics, surface water studies, land surveying, and drum handling activities, management of extensive field investigation activities including supervision of subcontractors, initial scoping of FS remedial action alternatives, and preparation of RI reports. Also Mr. Peronto managed the completion of ground water modeling for one of the landfill sites and human health and ecological risk assessments for two of the sites.

**New York City Economic Development Corporation, Former CSX Railyard/Ballpark at St. George Station – Staten Island, NY.** Mr. Peronto managed the remediation of this former CSX railyard site and 52-acre waterfront property. He prepared Remediation Work Plan that was approved by NYSDEC under the state Voluntary Cleanup Program. As part of the stadium development, he developed and negotiated final site-specific soil cleanup levels with NYSDEC and NYSDOH for EDC. Also Mr. Peronto developed a Health and Safety Plan and Material Management specification for the protection of site workers and surrounding community and to assure proper management of site materials (e.g., soil, fill, debris) during the construction/development activities. He conducted routine inspections during construction to document compliance with the environmental compliance requirements associated with soil management, dust control, borrow placement, dewatering and erosion control. He prepared an Operation, Maintenance and Monitoring Plan to ensure continued maintenance of engineered controls including the soil and pavement caps, subslab gas venting and monitoring system, shoreline stone riprap, retention basins, and vegetation.

**New York City Economic Development Corporation, Bush Terminal Complex – Brooklyn, NY.** Mr. Peronto managed the removal of over 450 drums of grease, 20 drums of abandoned chemicals and waste, over 40 compressed gas cylinders, and over 300 tons of deteriorating bags of powdered boric acid from waterfront property and piers. He prepared Remediation Work Plans, conducted waste characterization sampling and testing, prepared waste removal specifications and bid schedules, evaluated bids, and subcontracted all waste removal activities. Mr. Peronto assisted in the preparation a Remedial Alternatives Report that presents an analysis of remedial alternatives to address the remedial action objectives for a landfill site. Also he oversaw the preparation of the Proposed Remedial Action Plan for the landfill site that presented the recommended remedial alternative for public review and comment. He assisted in the preparation of the Record of Decision for the landfill project. Mr. Peronto worked very closely with state environmental and public health agencies throughout this program. Currently he is managing the closure of the landfill including several predesign studies and preparation of the closure specifications/plans package. Predesign work and studies completed at the landfill include a dynamic compaction program over 9 acres, a pond sediment quality and tidal study, and a landfill gas migration study.

**New York City Economic Development Corporation, Environmental Consultant Retainer –**

**Various Locations, NY.** Mr. Peronto serves as Program Manager for an environmental retainer contract with this client since 1989. He manages remedial action activities at sites proposed or planned for development. Remedial activities have been conducted at many sites including former gasoline stations, junkyards, former industrial facilities, and abandoned disposal areas. Remedial site activities have included aboveground and underground storage tank removals, tank upgrades, soil removals, drum removals, waste removals, structure demolitions, and asbestos abatements. Mr. Peronto prepares the specifications and bid packages, selects bidders, conducts the bid evaluations, retains the contractors, and manages remedial activities. He develops project budgets and schedules and monitors activities to ensure adherence to limits. He reviews compliance with local, state and federal environmental laws and regulations during all activities.

**U. S. Generating Company/PG&E Energy, Lake Road Generating Facility, Water Resource Assessment and Wastewater Discharge Permitting – Killingly, CT.** Mr. Peronto completed detailed water resource assessments for three potential power plant sites in Connecticut. Assessment included full evaluations of available water resources for wet cooling option and included assessment of viable surface water, ground water and gray water resources. This also included detailed reviews of municipal and private water supply system Water Supply Plans, municipal wastewater discharge permits and discharge monitoring reports, and meetings and discussions with local, CTDEP and State of Connecticut Department of Public Health representatives.

Mr. Peronto completed detailed evaluations of water supply and wastewater discharge alternatives analysis. He prepared a wastewater discharge permit application and associated plans for a new 792 MW combined cycle power plant in Killingly, Connecticut. Discharge permit application included the preparation of a Spill Prevention Control and Countermeasure (SPCC) Plan, Resource Conservation Plan, Operation and Maintenance Plan for water demineralization treatment system, and projection of discharge chemical information for the anticipated process wastewater discharge. Mr. Peronto prepared the Stormwater Pollution Prevention Plan for the facility construction activities and a stormwater discharge permit. He provided extensive town and state public hearing support and coordinated pre-application meetings with the town and CTDEP to facilitate the completion of the permit application.

Mr. Peronto prepared related sections of the Environmental Effects Report and the Connecticut Siting Council Application for a Certificate of Environmental Compatibility and Public Need for this project.

**Bechtel Power Corporation, Yankee Haddam Neck Power, Environmental Compliance Plan and Services – Haddam Neck, CT.** Mr. Peronto served as Project Manager for an environmental consulting services retainer with Bechtel for the decommissioning of the plant. He was responsible for completing the Decommissioning Environmental Control Plan that identified all applicable environmental regulatory requirements, permit conditions, and other associated environmental documents. The plan included a detailed description of environmental requirements during decommissioning relative to asbestos, lead, PCBs, hazardous waste, air, petroleum storage tanks, wetlands and coastal waters, stormwater, wastewater, water diversions, non-community water supply systems, endangered/ threatened/special species, and spill prevention, control, and reporting. Also Mr. Peronto provided on-call environmental consulting support services during the decommissioning activities. These services included support related to hazardous waste management, reporting for private water supply wells, revision of NPDES wastewater discharge permit, completion of a Stormwater Pollution Control Plan for

construction/decommissioning, closure of a 90-day hazardous waste storage area, permitting for a temporary dam, and wetlands permitting.

**PP&L Global, Wallingford Generating Facility, Water Resource and Wastewater Discharge Analysis/Permitting and SPCC Plan – Wallingford, CT.** Mr. Peronto completed detailed water resource and wastewater discharge assessments for a proposed 500 MW combined cycle power plant. Water resource assessment included full evaluations of available water resources for wet cooling option and included assessment of viable surface water, ground water, and grey water resources. This also included detailed reviews of several pipeline routes for the interbasin transfer of water to the facility. Wastewater discharge assessments included an evaluation of discharge to surface water and existing sewage treatment plants. Assessment also included detailed reviews of municipal and private water supply system Water Supply Plans, existing municipal wastewater discharge permits and discharge monitoring reports, and meetings and discussions with local, Connecticut Department of Environmental Protection (CTDEP) and Connecticut Department of Public Health (CTDPH) representatives. Mr. Peronto completed water resources analysis section of the Environmental Effects Report prepared for a Connecticut Siting Council Certificate of Environmental Compatibility and Public Need for this project. He assisted the facility in obtaining general permits for non-contact cooling, hydrostatic pressure testing, and water treatment wastewaters discharges. He also assisted in the preparation of and provided certification of a Stormwater Pollution Control Plan for the construction activities and a SPCC Plan for the oil storage at the plant.

**Confidential Client, Manufacturing Facility Remedial Alternatives Analysis and Stormwater Quality Study – CT.** Mr. Peronto prepared a Remedial Alternatives Analysis Report (RAR) addressing stormwater management issues and associated remediation of soil and sediment contamination within drainage swales and adjacent waterbody. He developed remedial action objectives based on regulatory standards, criteria and guidelines, identified potentially applicable remedial technologies and process options and developed a range of remedial alternatives. Mr. Peronto provided technical support in developing detailed cost estimates for remedial alternatives. He presented a preferred remedial alternative that included stormwater pollution control upgrades, soil/sediment removal and post-remediation monitoring. Mr. Peronto worked closely with attorneys in developing a remedial strategy that met environmental goals while also representing the best interests of the client. He strategized with attorneys in developing list of appropriate talking points for the presentation of the report to the CTDEP.

Mr. Peronto planned and implemented an extensive stormwater monitoring program to assess multiple sources of pollutants and develop plan for reducing stormwater pollutants discharging from the industrial facility into an adjacent river.

**Various Industrial Facilities, Stormwater Pollution Prevention Plans – Multiple Locations, CT.** In compliance with the Connecticut Department of Environmental Protection (CTDEP) General Permit for the Discharge of Stormwater Associated with an Industrial Activity, Mr. Peronto prepared Stormwater Pollution Prevention Plan (SWPPPs) for a Connecticut buffing and coatings facility and a Connecticut machining and plating firm. This included conducting assessments of potential stormwater pollution sources as well as providing an inventory of source materials and non-stormwater discharges, facility drainage maps, stormwater monitoring and reporting requirements, and suggested best management practices to control potential stormwater pollution. Mr. Peronto updated an existing SWPPP for a commercial trucking facility and performed the annual stormwater monitoring for the facility.

**Columbia University, Petroleum Storage Tank Compliance Review and Spill Prevention, Control and Countermeasure (SPCC) Plan – New York, NY.** Mr. Peronto conducted audits of existing conditions of over 150 petroleum storage tank systems at the main campus in New York City, the Columbia University Medical Center, and several satellite campus locations. He assessed compliance with both state and federal environmental regulations pertaining to aboveground storage tanks, underground storage tanks, and applicability of oil pollution prevention SPCC planning requirements. Mr. Peronto prepared a report on the findings of the audit and recommendations for maintaining compliance with the regulations. He completed four SPCC Plans in compliance with the federal oil pollution prevention regulations and prepared updates compliance with the June 2002 SPCC regulations. He provided Professional Engineer certification of the final plans.

**Yale University, NPDES Wastewater Discharge Permit and Spill Prevention Control and Countermeasure (SPCC) Plans – New Haven, CT.** Mr. Peronto prepared individual NPDES wastewater discharge permit applications for two large power plants at Yale University. Wastewater discharges in the permit include non-contact cooling water, boiler blowdown, condensate water, and other power plant operational wastewaters. He conducted plant inspections and developed detailed floor plans for each plant which show the equipment layout, floor drains, and wastewater discharge locations. Mr. Peronto managed the collection of daily composite wastewater discharge samples from two of the plants for the permit application. He also prepared Spill Prevention Control and Countermeasure (SPCC) Plans for each plant as part of the permit application submittal.

**State of Connecticut Department of Construction Services, Regional Vocational Technical Schools, Multi-Media Compliance Audits.** Task Manager for the performance of wastewater, stormwater, and hazardous and regulated waste environmental compliance audits of 19 regional vocational-technical schools throughout Connecticut. Audits included review of compliance with applicable state and federal regulations and an assessment of required environmental permits, reporting, recordkeeping, and training. Assessed the petroleum storage conditions at each school to determine the applicability of Spill Prevention Control and Countermeasure (SPCC) planning requirements. Provided a report on the scope and findings of the assessments along with recommendations regarding wastewater discharge permitting, hazardous waste management, SPCC planning, other environmental compliance requirements, and associated best management practices. Assisted in the development of Spill Response Plans and Environmental Training Plans for each school. Provided facility-specific environmental training to school personnel.

**SPECIALIZED TRAINING**

- OSHA 40-Hour Hazwoper Training (29CFR 1910.120), 1985
- OSHA 8-Hour Supervisors Training (29CFR 1910.120), 1989
- OSHA 8-Hour Refresher Training (29CFR 1910.120), annually 1986 present
- OSHA Confined Space Entry Training (29CFR 1910.146), 1994
- USDOT Hazardous Materials Management, HM126F/181/215A, 1995 and 2003
- USDOT DOT Shippers Course (49CFR 171-180), 2006
- OSHA Construction Safety, Safety Solution, 10 hours, 2006
- New York MTA Rail Safety Training, LIRR 2003, MNR 2006, MNR 2007
- RCRA Compliance Institute, Government Institutes, 40 hours, 1994
- Hazardous/Toxic Waste Management, Lion Technologies, 16 hours, 2001

**PROFESSIONAL AFFILIATIONS**

- Environmental Professionals Organization of Connecticut

## WES LINDEMUTH, CHMM, CSP

## EDUCATION

B.S., Environmental Science, Kutztown University, December 2004

## PROFESSIONAL REGISTRATION/CERTIFICATIONS

IHMM – Certified Hazardous Materials Manager – CHMM (No. 15661), May 2011
BCSP – Certified Safety Professional – CSP (No. CSP-30429), September 2015
NYSDEC – Erosion and Sediment Control Training (No. 45T-012014-31), January 2014

## AREAS OF EXPERTISE

Mr. Lindemuth has experience in the following general areas:

- Project Management
- Environmental Assessment and Audit
- Remedial Investigation
- Remedial Construction Inspection and Management
- Underground Storage Tank Investigation and Management
- Environmental Health and Safety
- Hazardous Materials Building Inspections
- Indoor Air Quality Investigations
- Vapor Intrusion Assessments

Mr. Wes Lindemuth serves as a Senior Project Manager based in TRC's New York City office and has approximately 11 years of experience and has assumed progressively increasing responsibilities in environmental consulting. His experience includes project scoping, budgeting, management, implementation of site assessments and investigations, reporting, health and safety management and close out of large scale environmental projects as well as supervising and directing project staff. Mr. Lindemuth has performed, reviewed and managed staff in connection with over 500 Phase I Environmental Site Assessments (ESAs) and 40 Phase II Environmental Site Investigations (ESIs) for residential, commercial, industrial, manufacturing and other properties throughout his career.

## REPRESENTATIVE EXPERIENCE

### ProSource Technologies LLC – NYS Smart Home Buyout Program

Mr. Lindemuth served as a Project Manager providing consulting services in connection with pre-acquisition due diligence for Hurricane Sandy-impacted residential and commercial properties located throughout New York. Responsibilities included the management of the completion of nearly 400 Phase I ESAs, 1,045 Tier II Forms, 12 Phase II ESIs and implementation of Stormwater Pollution Prevention Plan (SWPPP) inspections. Responsibilities also included all aspects of scope of work and cost estimate preparation, attending client meetings, staff supervision, subcontractor supervision, work plan implementation, and report preparation.

**NYC School Construction Authority – New York City, NY**

Mr. Lindemuth served as a Project Manager providing consulting services in connection with proposed new construction, alteration, and leased sites to assess the suitability of the sites for use as public school facilities. Responsibilities included management of 25 Phase I ESAs, 15 Phase II ESIs, five Vapor Intrusion and Indoor Air Quality Investigations, three underground storage tank (UST) Closures, four petroleum spill investigations, four Product Safety reviews, review of two excavated material disposal plans (EMDPs), preparation of state pollutant discharge elimination system (SPDES) permit applications, Long Island well permit applications, a chemical bulk storage tank closure plan, and assisted with obtaining New York City (NYC) Department of Environmental Protection (DEP) sewer use permits. Responsibilities included all aspects of scope of work and cost estimate preparation, client consultation, staff supervision, subcontractor supervision and work plan implementation, emergency response, and report writing including development of conclusions and recommendations.

**NYC Economic Development Corporation – NY**

Mr. Lindemuth served as an Assistant Project Manager in connection with seven Phase I ESAs, four Phase II ESIs, one hazardous material building inspection, an UST closure and two in-situ soil characterizations. Responsibilities included all aspects of preparation of Phase I ESA reports, all elements of Phase II ESI field investigations, confined space entry associated with the inspection of an underground storage tank vault, and preparation of two winning proposals for in-situ soil characterization. Additionally, responsible for the field inspection services in connection with the initial preparation of the Bush Terminal Landfill for development into a park. Responsibilities included inspection of dynamic compaction activities on the landfill, storm water management, soil gas sampling, and installation of groundwater monitoring well network.

**Brookfield Office Properties – Manhattan West, New York, NY**

Mr. Lindemuth served as a Project Manager responsible for managing the performance of environmental services in connection with the construction of a 69-story commercial tower at the Manhattan West redevelopment project enrolled in the New York City Office of Environmental Remediation (OER) Voluntary Cleanup Program (VCP). Services included interface with the OER and coordination from enrollment through completion of the VCP, performance of a soil vapor investigation, preparation of a Hazardous Materials Remedial Action Work Plan (RAWP), a Noise Remedial Action Plan (RAP) and an Air Quality RAP required as part of the VCP. Environmental services also included remediation oversight in connection with the performance of soil characterization sampling and excavation and off-site disposal of historic fill and hazardous waste. In addition, responsibilities included the management of a third party monitoring consultant in connection with the performance of lead abatement activities of the Dyer Avenue Bridge including interface with Port Authority and review of the abatement contractor lead compliance program and health and safety plan (HASP). The Site received a Notice to Proceed from OER in May 2015.

**Vornado Realty Trust – New York City**

Mr. Lindemuth served as Project Manager responsible for the continuous performance of due diligence and environmental investigation services associated with acquisition, financial lending and redevelopment of over 25 properties located in NYC. Responsible for managing the performance of property inspections, remediation cost estimates, Phase I ESAs, Phase II ESIs

and coordination with NYC OER in connection with Site redevelopment including Site investigations, preparation of Remedial Action Work Plans, and Remedial Action Reports.

**Two Trees Management Company – 60 Water Street, Brooklyn, NY**

Mr. Lindemuth served as a Project Manager responsible for the implementation of a Remedial Action Work Plan in connection with the redevelopment of the 46,000-square-foot NYC OER VCP site. Responsibilities included staff supervision during the oversight of the excavation and off-site disposal of approximately 33,000-cubic yards of historic fill and soil from the site, daily reporting to the NYC OER, collection of post-excavation end-point soil samples, oversight of the removal of underground storage tanks, performance of inspections in connection with the installation of a passive sub-slab venting system, and preparation of a Remedial Action Report. The site received a notice of satisfaction from OER in December 2014.

**Two Trees Management Company – Domino Sugar Project, Brooklyn, NY**

Mr. Lindemuth served as a Project Manager providing consulting services in connection with the large scale, mixed-use development project to redevelop the 11.1 acre plot of land the former Domino Sugar Refinery currently resides on. Responsibilities included managing the development of several construction measure plans including dust control, noise control, soil erosion and sediment control, pest management, and air emission reduction measures. Responsible for implementing a groundwater monitoring program to comply with the NYSDEC regulations in connection with two 250,000-gallon No. 6 fuel oil underground storage tanks. In addition, managed and supervised staff during the performance of weekly inspections and submission of a monthly compliance report to the NYC Department of City Planning.

**SL Green Realty Corporation – Due Diligence, New York City**

Mr. Lindemuth served as a Project Manager responsible for the performance of due diligence and environmental investigation services associated with acquisition, financial lending and redevelopment of over 25 properties located in NYC. Services provided include performance of property inspections, remediation cost estimates, Phase I ESAs, Phase II ESIs and one property enrolled in the New York State Brownfield Cleanup Program.

**BCRE – New York City**

Mr. Lindemuth served as Project Manager responsible for managing the performance of OER related services associated with the redevelopment of two properties in NYC. Responsibilities included all aspects of the required coordination with OER including staff supervision during the preparation of Notices of No Objection, Site Investigation Work Plans, performance of Site Investigations, preparation of Site Investigation Reports and Remedial Action Work Plans.

**Artimus - 310 West 118th Street, Harlem, NY**

Mr. Lindemuth served as a Project Manager responsible for closure of a NYSDEC spill case and satisfaction of the OER reporting in connection with the redevelopment of an E-Designation site which involved the removal of two underground storage tanks, excavation and off-site disposal of petroleum contaminated soil and historic fill, inspection of the installation of a vapor barrier, and preparation and approval of a OER Remedial Closure Report.

**HINES – 1 Vanderbilt, New York, NY**

Mr. Lindemuth served as a Project Manager responsible for managing the performance of environmental services associated with the demolition of four buildings located adjacent to and west of Grand Central Station to allow construction of a 64-story commercial building. Responsibilities included supervising staff during the performance of a Site Investigation and associated reporting to the NYC DEP and OER.

**Gardiner and Theobald – Brooklyn Botanical Garden, Brooklyn, NY**

Mr. Lindemuth served as a Project Manager responsible for providing environmental consulting services in connection with the implementation of enhancements at the Brooklyn Botanical Garden. Responsible for implementation of a soil investigation program and reporting associated with the NYC DEP City Environmental Quality Review (CEQR) review process. Prepared a Construction Health and Safety Plan for use in connection with construction activities.

**Breeze Demolition Inc. – JFK Airport, Queens, NY**

Mr. Lindemuth served as a Project Manager responsible for managing the preparation of work plans associated with the demolition of Hangers 3, 4 and 5 located at the JFK Airport. Responsibilities included preparation of a Fire Safety Plan, Dewatering Plan and Soil Erosion and Sediment Control Plan for submittal for review and approval by the Port Authority.

**New York Families for Autistic Children – Queens, NY**

Mr. Lindemuth served as an Associate Project Manager providing environmental consulting services to the New York Families for Autistic Children (NYFAC) in connection with acquisition of a CEQR property located in Queens, New York. Services included the review of prior reports and regulatory correspondence (e.g., conditional negative declaration), performance of an Indoor Air Quality Survey, cleanout of two drywells, and a vapor intrusion survey. Responsibilities included all client coordination, proposal preparation, report preparation, and invoicing.

**Spectra Energy – NY/NJ Expansion**

Mr. Lindemuth served as an Associate Project Manager in connection with the construction of a natural gas pipeline from New Jersey to New York. The project consisted of the construction of approximately 20.3 miles of multi-diameter pipeline, associated pipeline support facilities, and six new metering and regulating stations. Mr. Lindemuth supervised a team of ten environmental inspectors performing oversight of construction activities including excavation and off-site disposal of non-hazardous and hazardous soil, treatment of groundwater prior to discharge to the ground surface or surface water body, spill reporting and cleanup, stormwater erosion and control inspection, worker health and safety oversight, and compliance with the Federal Energy Regulation Commission (FERC)-approved work plans. Responsibilities included team supervision, team health and safety oversight, review and distribution of daily reports, soil disposal management and tracking, and responding to client requests associated with construction operations.

**Turner Construction Company – MSK/CUNY Project, New York, NY**

Mr. Lindemuth served as a Project Manager responsible for providing environmental risk management in connection with the redevelopment of a former department of sanitation property

into a Memorial Sloan Kettering Cancer Center and City University of New York Campus. Responsibilities included subcontractor submittal review, staff supervision during soil and bedrock excavation oversight, manifest and hauler tracking, UST removal oversight, air and noise monitoring, and health and safety oversight.

**DHL Express USA – Due Diligence, Texas**

Mr. Lindemuth served as a Project Manager in connection with the performance of due diligence activities associated with the evaluation of several commercial properties located in Texas. Responsibilities included managing and supervising staff during the performance of Phase I ESAs and preparation of recommendations in connection with potential environmental risk.

**AIMCO, West Harlem Portfolio – Manhattan, NY**

Mr. Lindemuth served as a Senior Project Scientist responsible for performing pre-acquisition due diligence surveys for 95 apartment buildings located throughout the Harlem neighborhood in Manhattan, New York for AIMCO, a real estate investment trust company. Responsibilities included preparation of Phase I ESA reports for each property as well as radon sampling and implementing several Phase II ESIs. Performed construction oversight for remediation projects including oversight of the removal of an underground storage tank system and oversight of in-situ chemical oxidation for groundwater remediation for AIMCO.

**GDF SUEZ, Astoria Energy Power Plant – Queens, NY**

Mr. Lindemuth served as an Article X Environmental Inspector working on behalf of Suez Energy (owner) in connection with the construction phase of a state-of-the-art Power Generating Facility in Astoria, NY. Article X Environmental Inspector responsibilities included verifying all construction activities and environmental measures were performed in compliance with the certificate conditions, as well as all federal, state and local statutes, ordinances, rules and regulations. Responsibilities also included client coordination, oversight of hazardous and non-hazardous waste tracking and disposal, SWPPP inspection, and health and safety compliance.

**Queens West Development Corporation – Queens, NY**

Mr. Lindemuth served as the Site Construction Manager in connection with the remediation of a nine acre designated Brownfield (NYSDEC BCP Site Nos. C241095 and C241096) site in Long Island City, Queens, NY. Supervised a team of four environmental professionals during the excavation of approximately 100,000 tons of soil under negative pressure enclosures (tents), removal of Light Non Aqueous Phase Liquid (LNAPL) via high vacuum extraction and implementation of an in-situ chemical oxidation pilot test using direct injection methods and a five foot diameter soil mixing/injection tool, post-excavation (end point) soil sampling, post-remediation groundwater well construction and sampling and soil vapor sampling. Supervised supplemental remediation activities including excavation of approximately 10,000 cubic yards of “grossly contaminated” soil below a lower permeability “peat” layer and the water table. Responsibilities included staff supervision and management of daily reporting to NYSDEC Region 2, oversight of excavation, dewatering, management of separate phase product, off-site transportation and disposal of excavated material, post-excavation sampling, procurement of clean soil backfill, backfilling of excavations and implementation of the site SWPPP, community air monitoring program, and health and safety oversight. A certificate of completion was issued by NYSDEC in December 2010.

**National Grid, Rockaway Park Former Manufactured Gas Plant (MGP) Site, – Queens, NY**

Mr. Lindemuth periodically served as the Site Health and Safety Manager in connection with the remediation of the 9.8-acre National Grid Rockaway Park Former Manufactured Gas Plant (MGP) Site located in Queens, NY. The remedial activities performed included the excavation of over 150,000 tons of contaminated soil under negative pressure enclosures (tents) for off-site disposal. Responsible for providing daily health and safety briefings (tool box talks), performing real time air monitoring in the exclusion zone, implementing the necessary personal protective equipment (PPE) level, performing daily and weekly Health and Safety Inspections, and ensuring all site workers were in full compliance with the approved Site Specific HASP.

**Stewart EFI – Yonkers, NY**

Mr. Lindemuth served as a Senior Project Scientist and field team leader in connection with the Site Investigation, Remedial Investigation and Remedial Alternative Analysis of NYSDEC VCP Site No. V00691-3, and Voluntary Cleanup Agreement (VCA) Index No. W3-1005-04-06 located in Yonkers, New York. The Site consisted of over four acres developed with two parking lots, a residential structure, and a 200,000 square foot industrial building formerly utilized for metal parts manufacturing from 1942 until 2008, when manufacturing operations ceased. Field team leader responsibilities included staff supervision and management of mapping of on-site floor drains and piping, oversight of a geophysical survey, and implementation of a soil and groundwater investigation program. Responsible for report preparation including formulating conclusions and recommendations, subcontractor coordination, laboratory analytical results review and comparison to applicable regulatory criteria, and coordination with the client and NYSDEC. Company received a release and covenant not to sue letter from the NYSDEC in October 2011.

**Con Edison Inc. – New York City, NY**

Mr. Lindemuth served as a Senior Project Scientist for several subsurface investigations and hazardous materials building inspections at Consolidated Edison properties in New York. Served as a Project Scientist in connection with six hazardous material building inspections and two Phase II ESIs for Consolidated Edison properties. Responsibilities included implementation of Phase II ESI field programs and inspections of former substations to identify hazardous materials and characterize building materials prior to planned demolitions.

**Atlantic Environmental Solutions, Inc., Hoboken, NJ**

Mr. Lindemuth served as a Project Scientist responsible for supervising residential and light commercial projects involving: underground storage tank compliance (NJ); soil and groundwater remediation (NJ); Phase I ESAs, Phase II ESI; ISRA, BUST applicability (NJDEP), UST tightness testing (NY), Indoor Air Quality (NY and NJ); and managed asbestos surveys in several states. Project responsibilities included; project coordination and implementation, proposal writing, client and subcontractor coordination, NJDEP case manager coordination, report preparation, and budgeting.

**Pennsylvania Department of Environmental Protection, Wilkes-Barre, Harrisburg, Williamsport, PA (Summers 2002–2004)** – Engineering, Scientific & Technical Intern

**SPECIALIZED TRAINING**

- 4-Hour NYSDEC Erosion and Sediment Control Training, January 2014
- 8-Hour OSHA HAZWOPER Supervisor, August 2015
- 8-Hour OSHA HAZWOPER Refresher, February 2015
- 10-Hour OSHA Construction Safety Training, August 2015
- 30-Hour OSHA Construction Safety Training, September 2010
- 40-Hour OSHA HAZWOPER, August 2004
- Transportation Worker Identification Credential (TWIC)
- Secure Worker Access Credential (SWAC)

# RALPH P. PERAGINE, PE

## EDUCATION
B.S., Engineering, University of Connecticut, 1980

## PROFESSIONAL REGISTRATIONS/CERTIFICATIONS
Professional Engineer, State of New York, #064266, 1988
Professional Engineer, State of Connecticut, #14428, 1986

## AREAS OF EXPERTISE
Mr. Ralph P. Peragine, PE has project management and technical experience in the following general areas:

- NYCDEP Site Connection Proposals and Private Water Mains
- Site Development Plans
- Subdivision Plans
- Highway and Traffic Signal Design
- Maintenance and Protection of Traffic Plans
- Parking Facility Designs
- Stormwater Pollution Prevention Plans (SWPPPs)
- SWPPP Inspections
- Wastewater Collection Systems
- Water Distribution Systems
- Sanitary Pumping Stations
- Reinforced Concrete Retaining Walls
- Environmental Impact Statements (EISs)
- Construction Observations and Inspections
- Federal, State and Local Permits and Approvals

## REPRESENTATIVE EXPERIENCE
Mr. Peragine has over 30 years of experience and has assumed progressively increasing responsibility in civil engineering consulting. His qualifications include extensive hands-on planning, field investigation and construction management, design, permitting, cost estimating, and project management. Mr. Peragine's background includes extensive service to both public and private-sector clients. He currently serves in the capacity of Senior Project Manager and leads a Design Team for the Civil Engineering Group in the Hawthorne, NY office.

**PatterSun 2.3 Mw Solar Project, Patterson Sanitary Landfill, Town Of Patterson, Putnam County, NY -** Assisted in the preparation of the Stormwater Pollution Prevention Plan (SWPPP). Permitting and approval services included the preparation and submission of all necessary documentation for approval of the SWPPP by the New York State Department of Environmental Conservation.

**Salem Golf Club, Town of North Salem, NY** – The project consisted of the design of an onsite water supply system including existing well decommissioning, development of a new water supply well, filtration, ultraviolet disinfection and cross connection control. TRC services included obtaining the necessary approvals for a community water supply from the Westchester County Department of Health. Our services included design, permitting, construction administration and observation and project closeout including a completed works approval.

**East of Hudson Spill Containment Plan, Westchester and Putnam Counties, NY -** Mr. Peragine served as the Project Manager for the New York City Department of Environmental Protection (NYCDEP) as part of its project to protect water quality for the East of Hudson Catskill Delaware reservoir system proposal to install precast concrete storage sheds and boat ramps at several locations within the reservoir system which would allow for the rapid deployment of booms and boats should a spill occur. TRC was involved in the Project from the schematic phase through construction. Mr. Peragine was responsible for the preparation of site plans, grading plans, erosion and sediment control plans, construction details, and Stormwater Pollution Prevention Plans (SWPPP). Permitting and approval services included the preparation and submission of all necessary documentation required to obtain site plan approval, wetland/watercourse permits, soil erosion control permits and building permits from the Town of Bedford in Westchester County and the Towns of Carmel, Southeast and Kent in the Putnam County.

TRC was also tasked with the responsibility of the preparation and submission of all necessary documentation required to obtain a Protection of Waters Permit from the NYS Department of Environmental Conservation for three (3) of the subject sites. In addition, TRC prepared Pre-Construction Notification (PCN) Packages for submission and approval by the US Army Corps of Engineers for the proposed activities within the reservoir system under Nationwide Permit #36 – Boat Ramp.

**Greenburgh Public Library, Site/Civil Engineering Services, Town of Greenburgh, NY -** Mr. Peragine served as the Project Manager in charge of Site Engineering Services for the Greenburgh Public Library Expansion on an 8.1-acre tract of land located on the southerly side of Tarrytown Road in the Town of Greenburgh, Westchester County, New York. The Project consisted of the demolition of the existing Town Hall building; renovation and expansion of the existing public library; and parking area reconstruction. The project was previously developed as the Greenburgh Town Hall and Public Library complex. TRC was involved in the Project from the schematic site plan phase through site plan approval. Mr. Peragine was responsible for the preparation of layout plans, grading plans, utility plans, erosion and sediment control plans, construction

details, the Stormwater Pollution Prevention Plan (SWPPP) and technical specifications.

**Bonnie Briar Country Club, Mamaroneck, NY -** TRC provided site engineering services for several projects including the renovation and relocation of several greens and tees, a comfort station and a new maintenance facility on the existing 18-hole golf course. TRC was involved in the Project from the schematic site plan phase through construction and was responsible for the preparation of layout plans, grading plans, utility plans, erosion and sediment control plans, construction details, the Stormwater Pollution Prevention Plan (SWPPP) and technical specifications. TRC services included the acquisition of all necessary approvals and permits.

**College of Mount Saint Vincent, Riverdale, Bronx, NY** – Under Mr. Peragine's supervision, TRC provided site engineering services for several projects including the development of Mastronardi Hall. TRC was involved in the Project from the schematic site plan phase through construction and was responsible for the preparation of layout plans, grading plans, utility plans, erosion and sediment control plans, construction details, the Stormwater Pollution Prevention Plan (SWPPP) and technical specifications. TRC services included the acquisition of NYCDEP Special Natural Area District Approval and Site Connection approvals.

**PROFESSIONAL AFFILIATIONS**

- Member – National and New York State Society of Professional Engineers
- Member – American Society of Civil Engineers
- Member – American Water Works Association
- Past President of the Westchester Putnam Chapter of the New York State Society of Professional Engineers
- Holds the position of Director on the Board of Directors for the Westchester Putnam Chapter of the New York State Society of Professional Engineers

**AWARDS**

- Outstanding Service to the Chapter Award (2014) - Westchester Putnam Chapter of the New York State Society of Professional Engineers

**ELIZABETH A. DENLY**

**EDUCATION**
B.A., Chemistry, University of New Hampshire, 1987

**PROFESSIONAL REGISTRATIONS /CERTIFICATIONS**
Licensed Site Professional Association, Massachusetts, Associate Member

**AREAS OF EXPERTISE**
Ms. Denly has over 25 years of experience in:

- Quality Assurance/Quality Control
- Data Validation
- Laboratory Audits
- Gas Chromatography: Field and Laboratory Analyses
- Gas Chromatography/Mass Spectrometry: Field and Laboratory Analyses

**Quality Assurance/Quality Control**
As a QA chemist at TRC, Ms. Denly is responsible for providing QA/QC oversight in support of a variety of environmental investigations including contaminant ambient air monitoring, human health and ecological risk assessments, risk-based soil cleanups, remediation programs, and delineation. Ms. Denly has provided this oversight under different regulatory programs, including NYSDEC, NJDEP, MassDEP and USEPA Region I, Region II, Region III, and Region V. In this role, she has been responsible for the preparation of the project-specific QAPP, coordination with the laboratory, selection of the appropriate analytical methodologies to achieve the desired state or regulatory standards, oversight and performance of the data validation process, and determination of the usability of the data in comparison to the overall project objectives.

In addition, Ms. Denly serves as the TRC Environmental Sector and Remediation Practice Quality Coordinator, responsible for the creation and implementation of the TRC Environmental Sector Quality Management Plan.

**Data Validation**
Ms. Denly provides oversight and senior review on data validation performed for a variety of analytical parameters. She performs data validation for organic parameters including VOCs, SVOCs, Pesticides, PCB Aroclors, PCB homologues/congeners, dioxins, specialty analyses including GC/MS/SIM and various air analyses. Validation and reporting guidelines utilized include EPA National Functional Guidelines, USEPA Regions I through V, NYSDEC, and NJDEP. Ms. Denly developed internal protocols for the validation of the MassDEP EPH/VPH methodologies.

## REPRESENTATIVE EXPERIENCE

**New York City School Construction Authority**
Ms. Denly assisted in the preparation of QA protocols for a pilot study to evaluate the possible presence of PCB in building materials and preferred remedial remedies in select schools constructed between 1950 and 1978. QA protocols included sampling and analysis procedures for PCBs in several matrices (caulk, wipes, soil, air and bulk). Ms. Denly was responsible for reviewing field team documentation, providing oversight of the analytical laboratory, and coordinating data validation. She was responsible for frequent communication with the laboratories to ensure proper receipt of samples, proper utilization of project-specific analytical protocols in order to achieve necessary project action levels, and to monitor the overall performance of the laboratories. Ms. Denly coordinated with the laboratories to ensure proper cleanup procedures were performed on difficult bulk matrices from the school buildings to confirm the highest level of data defensibility.

**130 Liberty Street – New York, NY**
Ms. Denly developed the QAPP for the extensive ambient air monitoring program and waste management program under USEPA Region II oversight. Ms. Denly provided oversight of six analytical laboratories and was responsible for coordination and performance of data validation for asbestos, metals, dioxins/furans, PAHs, PCBs, and silica ambient air data as well as TCLP and metals waste characterization data. Ms. Denly communicated frequently with the laboratories to ensure proper receipt of samples, proper utilization of project-specific analytical protocols and to monitor the overall performance of the laboratories. Responsible for the oversight and performance of field and laboratory audits. Reviewed all data prior to web-site posting and submission to USEPA.

**Mattiace Petrochemical – Glen Cove, NY**
Ms. Denly prepared the QAPP for the Long Term Remedial Action under TRC's Exit Strategy® program using USEPA Region II guidance. She provided QA oversight to the field team. Ms. Denly also performed data validation of data generated for demonstration of achievement of cleanup objectives. Ms. Denly was responsible for performing assessment of data to determine overall usability.

**Queens West Development – Stage 2 Site – Long Island City, NY**
Ms. Denly prepared the QAPP for the NYSDEC Voluntary Cleanup Program under TRC's Exit Strategy® program. She provided QA oversight to the field team. Ms. Denly performed data validation for the program. She was responsible for performing assessment of data to determine overall usability. Ms. Denly provided daily support to the project team on chemistry, laboratory, and

QA issues. She was responsible for ensuring project objectives were achieved by the laboratory and for oversight of laboratory QA issues.

**Consolidated Edison First Avenue Properties – New York, NY**
Ms. Denly prepared a QAPP for Supplemental Soil Investigation and Voluntary Cleanup of four sites under TRC's Exit Strategy® program. She provided QA oversight to field team. Ms. Denly performed data validation of select data points used for decision-making and was responsible for performing assessment of data to determine overall usability for various Remedial Work Plans.

**New Bedford High School – New Bedford, MA**
Ms. Denly serves as Project QA Manager and PCB chemistry expert for the investigation and remediation of multiple PCB containing building materials. Responsibilities include reviewing all field notes, performing data validation, preparing of data usability assessments and overseeing the analytical laboratories.

**Woodbrook Road Superfund Site – South Plainfield, NJ**
Ms. Denly developed the QAPP for a complex remedial investigation under USEPA Region II oversight. The program involved use of the TRIAD approach for real-time PCB results for sampling and analysis of soil, sediment, groundwater, and surface water for all TCL/TAL parameters, dioxins/furans, PCB congeners, and a variety of wet chemistry parameters, most of which will be used in a human health/ecological risk assessment. Ms. Denly was responsible for providing oversight of three analytical laboratories and for coordination of data validation for all parameters. She communicated frequently with the laboratories to ensure proper receipt of samples, proper utilization of project-specific analytical protocols in order to achieve necessary project action levels, and to monitor the overall performance of the laboratories. Ms. Denly is responsible for the oversight and performance of field and laboratory audits.

**FAA, Region II – Atlantic City, NJ**
Ms. Denly assisted in the preparation of QA protocols for the Supplemental RI and Ecological Risk Assessment Work Plan. She was also responsible for providing QA support to the field team. Ms. Denly interfaced with laboratories to ensure achievement of risk-based standards and performed data validation and/or oversight for all data generated. Ms. Denly provided oversight for all validation performed on the Remedial Investigation data.

**USEPA Region I Superfund RAC – MA**
Ms. Denly served as lead chemist for a variety of Superfund programs under the USEPA Region I Remedial Action Contract (RAC). Her responsibilities have included ongoing development of analytical specifications for laboratories to achieve specific project objectives and development of QAPPs following the requirements of USEPA Region I QAPP guidelines. She performs data validation

and/or senior review of data validation for a variety of analytical methodologies utilizing USEPA Region I validation guidelines. Ms. Denly generates data usability assessments and/or split sample comparison reports in accordance with USEPA Region I guidance, when required. She interacts with USEPA Region I chemists in the selection of analytical methodologies and project objectives. Ms. Denly provides QA oversight of PRPs' validation reports, sampling and analysis plans, and QAPPs. She is also responsible for providing QA oversight to field teams, performing daily reviews of COCs and traffic reports, and acting as the main liaison between the field team and USEPA.

**Massachusetts Department of Environmental Protection – MA**
Ms. Denly is currently providing assistance to MassDEP to determine whether the regulated community is correctly implementing analytical methodologies at MassDEP sites; this includes providing training for all MassDEP auditors. Ms. Denly is also assisting MassDEP in the development of a protocol for the analysis of volatile petroleum hydrocarbons (VPH) by GC/MS. Previously, Ms. Denly has assisted MassDEP in the review/evaluation of data packages for EPH/VPH analyses from laboratories selected by MassDEP as part of a Data Audit project to ensure compliance with the methods and CAM. She provided consultation to MassDEP for revisions to the MassDEP's innovative EPH/VPH analytical methods used to measure petroleum hydrocarbon concentrations in soil and groundwater. Ms. Denly served as a member of the Data Quality Enhancement Work Group lead by MassDEP and assisted in the development of a policy for achieving consistency of data reported under the MCP. Ms. Denly was designated as the Organic Subcommittee Chairperson responsible for generating the framework for QC parameters on organic analyses typically utilized under the MCP, method-specific performance standards for these QC parameters, minimum reporting requirements for the laboratories for each method, and a list of what laboratories need to keep on file for potential audits by the MassDEP. She was responsible for generating the final deliverable on all organic method requirements developed under this Work Group, providing significant input into the development of requirements for inorganic methods as well as field sampling QC requirements, and LSP data usability assessment requirements.

**Consolidated Edison Company, Electrical Power Generator – NY**
Ms. Denly performed a method validation study to establish the applicability of an ASTM UV method for the measurement of dielectric fluids in soils. Detection limits, precision, accuracy, and comparability to laboratory analyses were investigated for each oil.

**Consolidated Edison Company, Electrical Power Generator – NY**
Ms. Denly prepared and analyzed soil samples for an RFI of the facility in Astoria, New York. She quantitatively identified samples for TPH by GC/FID. Ms. Denly performed qualitative identification of the soils based on analysis of

several of categories of oils used at the facility, including fuel oil #2, fuel oil #6, transformer oil, gas condensate, and dielectric fluids.

**PUBLICATIONS AND PRESENTATIONS**

Denly, E. Chapnick, S., "*Is Presumptive Certainty Generating Usable Data for Massachusetts Contingency Plan (MCP) Decisions?*" Paper presented at Twentieth Annual Conference on Contaminated Soils, Sediments and Waters, Amherst, MA. 2004.

Denly, E., Hoyt, M., Anastas, N., Fitzgerald, J., Hutcheson, M., McGrath, T., "*Massachusetts VPH Method Validation for Indoor Air Samples"*. Poster presented at Thirteenth Annual Conference on Contaminated Soils, Amherst, MA. 1998.

Denly, E. Hopper, D., *"Field Chemistry for PAHs and VOCs Applied to a Risk-Based Soil Cleanup at a Landfill"*, Paper presented at Fifth International Symposium on Field Analytical Methods for Hazardous Wastes and Toxic Chemicals, Las Vegas, NV. 1997.

Denly, E., Hoyt, M., Camp, W.H., Naughton, G., *"Method Validation Study for Field Screening of Dielectric Fluids in Soils"*, Paper presented at Twelfth Annual Conference on Contaminated Soils, Amherst, MA. 1997.

Denly, E., Wang, H., *"Preparation of Tedlar Bag Whole Air Standards with a SUMMA Canister for Field VOC Analysis"*, Poster presented at Fourth International Symposium on Field Screening Methods for Hazardous Waste and Toxic Chemicals, February 22-24, 1995, Las Vegas, NV.

**SPECIALIZED TRAINING**

- Data Evaluation for Vapor Intrusion Studies, 9/07
- Sediment Toxicity Testing: Methods to Achieve Strong Data Sets and Interpret Results, 6/07
- Assessing the Vapor Intrusion Pathway at Contaminated Sites, NHDES Waste Management Division, 4/05
- Perchlorate Webinar, US EPA, 2/05
- Improved Project Communication: Within and Outside of the Project Team, ASCE Continuing Education Program, 12/15/04
- Communicating with Tact and Skill for Managers and Supervisors, Rockhurst University Continuing Education Center, 2004
- Training Session for USACE-NAE/USEPA Region I Regional Implementation Manual, 10/7/04
- Training for Non-Trainers, US EPA, 9/04
- Overview of Statistical Data Quality Assessment, US EPA, 9/04
- Assessing Quality Systems, US EPA, 9/04

- Understanding and Evaluating Data Quality Assessments, US EPA, 9/28/04
- PowerPoint 2000 – Level 1, New Horizons Computer Learning Centers, 12/03
- EPA Forms II Lite Training Course, 9/23/03
- MA DEP: “Beyond TPH: Understanding and Using the New EPH/VPH Approach”
- Arthur D. Little: "Advanced Chemical Fingerprinting of Petroleum Contaminated Soils and Water"
- ACS Short Course: "How to Develop and Troubleshoot Capillary GC Methods"
- ORA/RSA Workshop: Optical Remote Sensing
- Finnigan MAT: "Basic Mass Spectral Interpretation"
- Finnigan MAT: "Advanced Environmental MS Interpretation"

**ELIZABETH A. DENLY**

**EDUCATION**
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- Gas Chromatography/Mass Spectrometry: Field and Laboratory Analyses

**Quality Assurance/Quality Control**
As a QA chemist at TRC, Ms. Denly is responsible for providing QA/QC oversight in support of a variety of environmental investigations including contaminant ambient air monitoring, human health and ecological risk assessments, risk-based soil cleanups, remediation programs, and delineation. Ms. Denly has provided this oversight under different regulatory programs, including NYSDEC, NJDEP, MassDEP and USEPA Region I, Region II, Region III, and Region V. In this role, she has been responsible for the preparation of the project-specific QAPP, coordination with the laboratory, selection of the appropriate analytical methodologies to achieve the desired state or regulatory standards, oversight and performance of the data validation process, and determination of the usability of the data in comparison to the overall project objectives.

In addition, Ms. Denly serves as the TRC Environmental Sector and Remediation Practice Quality Coordinator, responsible for the creation and implementation of the TRC Environmental Sector Quality Management Plan.

**Data Validation**
Ms. Denly provides oversight and senior review on data validation performed for a variety of analytical parameters. She performs data validation for organic parameters including VOCs, SVOCs, Pesticides, PCB Aroclors, PCB homologues/congeners, dioxins, specialty analyses including GC/MS/SIM and various air analyses. Validation and reporting guidelines utilized include EPA National Functional Guidelines, USEPA Regions I through V, NYSDEC, and NJDEP. Ms. Denly developed internal protocols for the validation of the MassDEP EPH/VPH methodologies.

## REPRESENTATIVE EXPERIENCE

**New York City School Construction Authority**
Ms. Denly assisted in the preparation of QA protocols for a pilot study to evaluate the possible presence of PCB in building materials and preferred remedial remedies in select schools constructed between 1950 and 1978. QA protocols included sampling and analysis procedures for PCBs in several matrices (caulk, wipes, soil, air and bulk). Ms. Denly was responsible for reviewing field team documentation, providing oversight of the analytical laboratory, and coordinating data validation. She was responsible for frequent communication with the laboratories to ensure proper receipt of samples, proper utilization of project-specific analytical protocols in order to achieve necessary project action levels, and to monitor the overall performance of the laboratories. Ms. Denly coordinated with the laboratories to ensure proper cleanup procedures were performed on difficult bulk matrices from the school buildings to confirm the highest level of data defensibility.

**130 Liberty Street – New York, NY**
Ms. Denly developed the QAPP for the extensive ambient air monitoring program and waste management program under USEPA Region II oversight. Ms. Denly provided oversight of six analytical laboratories and was responsible for coordination and performance of data validation for asbestos, metals, dioxins/furans, PAHs, PCBs, and silica ambient air data as well as TCLP and metals waste characterization data. Ms. Denly communicated frequently with the laboratories to ensure proper receipt of samples, proper utilization of project-specific analytical protocols and to monitor the overall performance of the laboratories. Responsible for the oversight and performance of field and laboratory audits. Reviewed all data prior to web-site posting and submission to USEPA.

**Mattiace Petrochemical – Glen Cove, NY**
Ms. Denly prepared the QAPP for the Long Term Remedial Action under TRC's Exit Strategy® program using USEPA Region II guidance. She provided QA oversight to the field team. Ms. Denly also performed data validation of data generated for demonstration of achievement of cleanup objectives. Ms. Denly was responsible for performing assessment of data to determine overall usability.

**Queens West Development – Stage 2 Site – Long Island City, NY**
Ms. Denly prepared the QAPP for the NYSDEC Voluntary Cleanup Program under TRC's Exit Strategy® program. She provided QA oversight to the field team. Ms. Denly performed data validation for the program. She was responsible for performing assessment of data to determine overall usability. Ms. Denly provided daily support to the project team on chemistry, laboratory, and

QA issues. She was responsible for ensuring project objectives were achieved by the laboratory and for oversight of laboratory QA issues.

**Consolidated Edison First Avenue Properties – New York, NY**
Ms. Denly prepared a QAPP for Supplemental Soil Investigation and Voluntary Cleanup of four sites under TRC's Exit Strategy® program. She provided QA oversight to field team. Ms. Denly performed data validation of select data points used for decision-making and was responsible for performing assessment of data to determine overall usability for various Remedial Work Plans.

**New Bedford High School – New Bedford, MA**
Ms. Denly serves as Project QA Manager and PCB chemistry expert for the investigation and remediation of multiple PCB containing building materials. Responsibilities include reviewing all field notes, performing data validation, preparing of data usability assessments and overseeing the analytical laboratories.

**Woodbrook Road Superfund Site – South Plainfield, NJ**
Ms. Denly developed the QAPP for a complex remedial investigation under USEPA Region II oversight. The program involved use of the TRIAD approach for real-time PCB results for sampling and analysis of soil, sediment, groundwater, and surface water for all TCL/TAL parameters, dioxins/furans, PCB congeners, and a variety of wet chemistry parameters, most of which will be used in a human health/ecological risk assessment. Ms. Denly was responsible for providing oversight of three analytical laboratories and for coordination of data validation for all parameters. She communicated frequently with the laboratories to ensure proper receipt of samples, proper utilization of project-specific analytical protocols in order to achieve necessary project action levels, and to monitor the overall performance of the laboratories. Ms. Denly is responsible for the oversight and performance of field and laboratory audits.

**FAA, Region II – Atlantic City, NJ**
Ms. Denly assisted in the preparation of QA protocols for the Supplemental RI and Ecological Risk Assessment Work Plan. She was also responsible for providing QA support to the field team. Ms. Denly interfaced with laboratories to ensure achievement of risk-based standards and performed data validation and/or oversight for all data generated. Ms. Denly provided oversight for all validation performed on the Remedial Investigation data.

**USEPA Region I Superfund RAC – MA**
Ms. Denly served as lead chemist for a variety of Superfund programs under the USEPA Region I Remedial Action Contract (RAC). Her responsibilities have included ongoing development of analytical specifications for laboratories to achieve specific project objectives and development of QAPPs following the requirements of USEPA Region I QAPP guidelines. She performs data validation

and/or senior review of data validation for a variety of analytical methodologies utilizing USEPA Region I validation guidelines. Ms. Denly generates data usability assessments and/or split sample comparison reports in accordance with USEPA Region I guidance, when required. She interacts with USEPA Region I chemists in the selection of analytical methodologies and project objectives. Ms. Denly provides QA oversight of PRPs' validation reports, sampling and analysis plans, and QAPPs. She is also responsible for providing QA oversight to field teams, performing daily reviews of COCs and traffic reports, and acting as the main liaison between the field team and USEPA.

**Massachusetts Department of Environmental Protection – MA**
Ms. Denly is currently providing assistance to MassDEP to determine whether the regulated community is correctly implementing analytical methodologies at MassDEP sites; this includes providing training for all MassDEP auditors. Ms. Denly is also assisting MassDEP in the development of a protocol for the analysis of volatile petroleum hydrocarbons (VPH) by GC/MS. Previously, Ms. Denly has assisted MassDEP in the review/evaluation of data packages for EPH/VPH analyses from laboratories selected by MassDEP as part of a Data Audit project to ensure compliance with the methods and CAM. She provided consultation to MassDEP for revisions to the MassDEP's innovative EPH/VPH analytical methods used to measure petroleum hydrocarbon concentrations in soil and groundwater. Ms. Denly served as a member of the Data Quality Enhancement Work Group lead by MassDEP and assisted in the development of a policy for achieving consistency of data reported under the MCP. Ms. Denly was designated as the Organic Subcommittee Chairperson responsible for generating the framework for QC parameters on organic analyses typically utilized under the MCP, method-specific performance standards for these QC parameters, minimum reporting requirements for the laboratories for each method, and a list of what laboratories need to keep on file for potential audits by the MassDEP. She was responsible for generating the final deliverable on all organic method requirements developed under this Work Group, providing significant input into the development of requirements for inorganic methods as well as field sampling QC requirements, and LSP data usability assessment requirements.

**Consolidated Edison Company, Electrical Power Generator – NY**
Ms. Denly performed a method validation study to establish the applicability of an ASTM UV method for the measurement of dielectric fluids in soils. Detection limits, precision, accuracy, and comparability to laboratory analyses were investigated for each oil.

**Consolidated Edison Company, Electrical Power Generator – NY**
Ms. Denly prepared and analyzed soil samples for an RFI of the facility in Astoria, New York. She quantitatively identified samples for TPH by GC/FID. Ms. Denly performed qualitative identification of the soils based on analysis of

several of categories of oils used at the facility, including fuel oil #2, fuel oil #6, transformer oil, gas condensate, and dielectric fluids.

**PUBLICATIONS AND PRESENTATIONS**

Denly, E. Chapnick, S., "*Is Presumptive Certainty Generating Usable Data for Massachusetts Contingency Plan (MCP) Decisions?*" Paper presented at Twentieth Annual Conference on Contaminated Soils, Sediments and Waters, Amherst, MA. 2004.

Denly, E., Hoyt, M., Anastas, N., Fitzgerald, J., Hutcheson, M., McGrath, T., "*Massachusetts VPH Method Validation for Indoor Air Samples"*. Poster presented at Thirteenth Annual Conference on Contaminated Soils, Amherst, MA. 1998.

Denly, E. Hopper, D., *"Field Chemistry for PAHs and VOCs Applied to a Risk-Based Soil Cleanup at a Landfill"*, Paper presented at Fifth International Symposium on Field Analytical Methods for Hazardous Wastes and Toxic Chemicals, Las Vegas, NV. 1997.

Denly, E., Hoyt, M., Camp, W.H., Naughton, G., *"Method Validation Study for Field Screening of Dielectric Fluids in Soils"*, Paper presented at Twelfth Annual Conference on Contaminated Soils, Amherst, MA. 1997.

Denly, E., Wang, H., *"Preparation of Tedlar Bag Whole Air Standards with a SUMMA Canister for Field VOC Analysis"*, Poster presented at Fourth International Symposium on Field Screening Methods for Hazardous Waste and Toxic Chemicals, February 22-24, 1995, Las Vegas, NV.

**SPECIALIZED TRAINING**

- Data Evaluation for Vapor Intrusion Studies, 9/07
- Sediment Toxicity Testing: Methods to Achieve Strong Data Sets and Interpret Results, 6/07
- Assessing the Vapor Intrusion Pathway at Contaminated Sites, NHDES Waste Management Division, 4/05
- Perchlorate Webinar, US EPA, 2/05
- Improved Project Communication: Within and Outside of the Project Team, ASCE Continuing Education Program, 12/15/04
- Communicating with Tact and Skill for Managers and Supervisors, Rockhurst University Continuing Education Center, 2004
- Training Session for USACE-NAE/USEPA Region I Regional Implementation Manual, 10/7/04
- Training for Non-Trainers, US EPA, 9/04
- Overview of Statistical Data Quality Assessment, US EPA, 9/04
- Assessing Quality Systems, US EPA, 9/04

- Understanding and Evaluating Data Quality Assessments, US EPA, 9/28/04
- PowerPoint 2000 – Level 1, New Horizons Computer Learning Centers, 12/03
- EPA Forms II Lite Training Course, 9/23/03
- MA DEP: “Beyond TPH: Understanding and Using the New EPH/VPH Approach”
- Arthur D. Little: "Advanced Chemical Fingerprinting of Petroleum Contaminated Soils and Water"
- ACS Short Course: "How to Develop and Troubleshoot Capillary GC Methods"
- ORA/RSA Workshop: Optical Remote Sensing
- Finnigan MAT: "Basic Mass Spectral Interpretation"
- Finnigan MAT: "Advanced Environmental MS Interpretation"

**KIRSTEN MYERS, P.E.**

**EDUCATION**
B.S., Civil Engineering, Cornell University, 2004

**PROFESSIONAL REGISTRATIONS/CERTIFICATIONS**
Professional Engineer, Massachusetts, No. 48184
Professional Engineer, New York, No. 089236

**AREAS OF EXPERTISE**
Ms. Myers has over nine years of environmental consulting experience with emphasis in the following areas:

- Remedial Design
- Remedial Construction Inspection/Environmental Compliance Monitoring
- Remedial Construction Management
- Groundwater and Soil Remediation
- Environmental Site Assessment
- Remedial Investigation

**REPRESENTATIVE EXPERIENCE**

**New York City School Construction Authority (NYCSCA)**
Under TRC's on-call environmental consulting hazardous materials services contract with the New York City School Construction Authority (NYCSCA), Ms. Myers has been responsible for maintenance, monitoring and reporting in connection with the oil removal system (a network of belt skimmers) in the basement boiler room at PS 192M in Manhattan. In addition, Ms. Myers implemented and prepared the Phase II ESI report for PS 70Q. Ms. Myers has also served as project engineer for review of construction contractor submittals for sub-slab depressurizations systems (piping plans and sub-slab pit details), and earthwork submittals (excavated materials disposal plans).

**Engineering Services during Decommissioning: Glenwood and Far Rockaway Power Stations – Glenwood Landing, NY**
Ms. Myers served as the project engineer for engineering in support of decommissioning of the Glenwood and Far Rockaway Power Stations. The Glenwood Power Station is a 210 megawatt natural gas fired steam electric generating peaking facility and Far Rockaway Power Station is a 100 megawatt natural gas-fired steam electric generating peaking facility. Ms. Myers served as the project engineer to provide the following Decommissioning services to National Grid by TRC: pre-demolition assessment of structures, buildings and cooling water intake and discharge structures, preparation of specifications and drawings, preparation of engineer's cost estimate and bid documents. Additionally, Ms. Myers has served as the full-time resident inspector and environmental monitor during the active decommissioning at

both Power Stations. In this role Ms. Myers has been responsible for monitoring for compliance in connection with all federal, state and local environmental regulations applicable to the two large, multi-million dollar demolition projects in Far Rockaway and Nassau County. Both facilities are located adjacent to sensitive environmental features, including surface water bodies.

**Engineering Services during Demolition: City of Glen Cove Incinerator – Glen Cove, NY**

Ms. Myers served as the project engineer for engineering in support of deconstruction of the City of Glen Cove Incinerator. The City of Glen Cove Incinerator was a trash and sludge co-disposal and energy recovery facility. Ms. Myers served as the project engineer to provide the following Demolition services to the City of Glen Cove by TRC: preparation of specifications and drawings and bid documents.

**Jetro/Restaurant Depot: Oak Point Properties – Bronx, NY**

Ms. Myers served as the environmental project engineer in support of construction of the 200,000 $ft^2$ high-bay wholesale warehouse located at the site of a former construction and demolition debris landfill in the Hunts Point neighborhood of the Bronx. Ms. Myers's responsibilities have included development of typical details for the gas vapor barrier (GVB), inspection of the installation of the sub-slab depressurization system and GVB system, oversight of non-destructive testing of the GVB system, and review of construction contractor submittals.

**Engineering Services during Deconstruction: Charles Poletti Power Plant – Astoria, NY**

Ms. Myers served as the project engineer for engineering in support of deconstruction of the Charles Poletti Power Plant. The Charles Poletti Power Plant was a steam-electric 825 megawatt facility capable of firing natural gas and fuel oil. Ms. Myers served as the project engineer to provide the following Deconstruction services to New York Power Authority by TRC: pre-demolition assessment of buildings and cooling water intake and discharge structures, preparation of specifications and drawings, oversight of on-site subcontractors and asset recovery, preparation of engineer's cost estimate and bid documents.

**US Army Corps of Engineers (USACE), Total Environmental Restoration Contract (TERC) - Massachusetts Military Reservation, Camp Edwards, MA**

Ms. Myers served as the project engineer for the investigation and remediation of small arms ranges, gun positions, and the central impact area at the Massachusetts Military Reservation. Ms. Myers's responsibilities included preparation of investigation plans, remediation work plans, specifications, closeout reports and feasibility studies. Ms. Myers served as construction field engineer during the excavation and screening of approximately 4,000 cubic yards of lead-contaminated soil at inactive small arms ranges, and as field operations lead during investigation efforts which included multi-incremental soil sampling, x-ray fluorescence screening and installing monitoring wells. During field activities, Ms. Myers was responsible for preparing construction quality reports, interfacing with the on-site client representatives and regulatory

agencies and coordinating activities with subcontractors and unexploded ordnance (UXO) investigation teams.

**Engineering Field Activity Northeast (EFANE), Remedial Action Contract (RAC), Naval Air Station South Weymouth - South Weymouth, MA**
Ms. Myers served as the project engineer for the investigation and remediation of several areas of concern at the Naval Air Station in South Weymouth. Ms. Myers was the task manager for the remediation of the former sewage treatment plant. The removal activities included the excavation of 3,500 cubic yards of petroleum-impacted soil and pesticide-contaminated sediment. Ms. Myers completed PetroFLAG® (petroleum) and EnviroGard® (pesticides) field screening to delineate the excavation boundaries. Ms. Myers' responsibilities included preparation of investigation plans, remediation work plans, specifications and closeout reports. Ms. Myers served as the field engineer and health and safety officer for five remedial actions, including the demolition and removal of six 100-foot radio antennae. She also made two public presentations to the Restoration Advisory Board during removal actions to provide information regarding the remediation efforts.

**Confidential Insurance Company**
Ms. Myers served as project engineer to insurance underwriters in the completion of insurance quotes. Ms. Myers' responsibilities included reviewing environmental assessment, site investigation, and remediation reports and other site information to identify potential environmental conditions at the sites or deviations/omissions from regulatory requirements. She also participated in conference calls with the client, developers and attorneys.

**US Army Corps of Engineers (USACE), Total Environmental Restoration Contract (TERC), Silresim Superfund Site - Lowell, MA**
Ms. Myers served as the project engineer for the design of a 4.5-acre soil cap at the Silresim Superfund Site. Ms. Myers was responsible for on-site health and safety oversight of the surveyor and reviewed as-built conditions plans. She designed with AutoCAD Civil 3D the cap and site grading to allow for the future reuse of the property. Ms. Myers was also responsible for completing calculations, design analysis, specifications, CQAP and the Health and Safety Requirements Plan.

**IMTT-Bayonne, Soil Permeability Study - Bayonne, NJ**
Ms. Myers served as the project engineer/laboratory technician for the soil permeability study at the 600 tank IMTT-Bayonne facility. Ms. Myers ran an on-site geotechnical laboratory to determine the spill prevention capabilities of the existing earthen berms. Ms. Myers' responsibilities included creating sampling plans, following ASTM standards to test samples for a variety of parameters (permeability, grain size, maximum density, plasticity, and in-field density), performing the data analysis used to evaluate the spill capabilities, and coordinating the biweekly sampling between IMTT, and a civil construction contractor.

**SPECIALIZED TRAINING**

- OSHA 40-Hour Hazardous Waste Operations and Emergency Response Training
- OSHA 8-Hour Hazardous Waste Operations and Emergency Response Refresher Training
- Supervisory OSHA Health and Safety Training
- OSHA 30-Hour Construction Safety Training
- USACE Construction Quality Management for Contractors

**JOHN P. SPRINGSTON, CIH, CSP**

**EDUCATION:**
M.S., Environmental and Occupational Health, Hunter College, New York, NY (1993)
B.S., Environmental Biology, Southampton College, Southampton, NY (1983)

**CERTIFICATIONS:**
Certified Industrial Hygienist (CIH), American Board on Industrial Hygiene (1993)
Certified in Indoor Environmental Quality (CIH sub-specialty), ABIH (1999)
Certified Safety Professional (CSP), Board of Certified Safety Professionals (1996)

**TECHNICAL SPECIALTIES**
Mr. Springston is a Senior Project Manager based in TRC's New York City office. He has more than 26 years' experience in industrial hygiene, toxicology, project management and consulting in both public and private sectors. He is responsible for quality control, public/regulatory interaction, and technical report generation, management of field activities and subcontractors, and overall client service.

Mr. Springston has extensive experience in:

- Industrial Hygiene and Toxicology Projects and Programs
- Indoor Environmental Quality and Microbial Contamination Assessments
- Chemical Risk Assessments
- Asbestos and Lead Consulting and Management Services
- Corporate Environmental Health and Safety
- Construction and Demolition Site Safety and Health
- Retrospective Exposure Analysis
- Respiratory Protection Programs
- Expert Witness Services

**REPRESENTATIVE EXPERIENCE:**
**Safety Services for Abatement, Decommissioning, and Demolition: Glenwood Power Station, Glenwood Landing, NY and Far Rockaway Power Station, Far Rockaway, NY -** Mr. Springston serves as the overall Site Safety Officer for the abatement, decommissioning and demolition of two of National Grid's oldest, most inefficient plants in New York City and Long Island. The Far Rockaway and Glenwood power plants went into service in between 1900 and the 1950s and ceased operation in 2012. Work includes the abatement of asbestos-containing building materials, PCB-containing building materials, lead-based paint and mercury-containing equipment, as well as the subsequent demolition of the entire plant facilities.

**PCB in Caulk Pilot Study – New York City School Construction Authority -** Mr. Springston is the Senior Project Manager for this project. TRC is currently providing technical support to the New York School Construction Authority (NYCSCA) for the implementation of the PCB Caulk Pilot Study as described in the Consent Agreement and Final Order (CAFO) between the NYCSCA and United States Environmental Protection Agency (USEPA) Region 2 dated January 19, 2010. This agreement was reached to address the assessment and remediation of PCB caulk in New York City public school buildings. There are over 600 school buildings where the presence of PCB caulk is suspected, therefore this project was intended to provide additional information to assist in addressing this issue. This project is the first of its kind in the nation and is being implemented to provide information related to this emerging environmental issue. As part of this work, TRC has prepared or assisted in the preparation of the following documents:

- Remedial Investigation Work Plan (RIWP)
- Citizens Participation Plan (CPP)
- Best Management Practices Plan (BMP)
- Remedial Investigation Report and Feasibility Study (RIFS)

**Hotel Chelsea, Microbiological Consultation Services -** Mr. Springston provided consultation services and oversight on a large scale microbial remediation project in this historic New York City hotel. This included inspecting various apartments, development of remediation scope of work and verifying that the abatement work had been properly performed.

**Confidential Client, Expert Witness Services -** Mr. Springston provided an expert report and testimony in response to an expert's claim that a tug boat deckhand's exposure to benzene contributed to his developing myelodysplastic syndrome (MDS). He conducted a thorough evaluation of Plaintiff's work history and reviewed data, expert reports, testimony and other facts pertinent to the case.

**Confidential Client, Indoor Air Quality and Microbiological Investigation -** Mr. Springston performed an extensive indoor air quality and microbiological investigation of a five-star hotel in New York City. This included air quality testing and air and bulk sampling for fungi throughout the facility.

**Senior Industrial Hygienist and Environmental Specialist -** As a Senior Industrial Hygienist for a Long Island based industrial hygiene and occupational medicine consulting company, Mr. Springston managed and performed various industrial hygiene and toxicology projects, including indoor air quality evaluations, chemical risk assessments, lead exposure projects and respiratory protection programs.

- Conducted industrial hygiene surveys and evaluations as part of a large multi-site exposure evaluation and modeling project for the aggregates mining industry. Analyzed silica data captured over more than 7 years to determine exposure trends.
- Developed exposure prevention and control plans and conduct related safety inspections on both large and small scale construction projects, including the demolition and reconstruction of the Roslyn Viaduct and various construction projects at Brookhaven National Laboratories.
- Managed, oversaw and conducted industrial hygiene, ergonomic and risk reduction surveys throughout the United States, Canada and Europe for a Fortune 500 cosmetics manufacturing company. Reviewed field data, interpreted laboratory results and generated associated reports.

**Director of Field Operations -** As the Director of Field Operations for a New York City based industrial hygiene consulting company, Mr. Springston was responsible for the operations, management, planning and budgets for the entire field operations of the company. He planned, reviewed, trained and evaluated work performed by Certified Industrial Hygienists, project managers, staff industrial hygienists, environmental scientists and support personnel.

- Performed the initial environmental evaluations and dust sampling in numerous buildings at and around Ground Zero following the WTC attacks. Developed abatement specifications and provided daily oversight, testing and consulting services associated with the clean–up of several buildings, including 114 Liberty and 90 Church Street.
- Performed Indoor Environmental Quality and microbiological contamination surveys in various commercial and industrial facilities, including office buildings, hospitals, hotels, museums and schools. Designed and performed various types of HVAC inspections and evaluations, including tracer gas studies and filter efficiency studies using particle generators.

**Project Manager -** During Mr. Springston's tenure as Project Manager for a Long Island based asbestos and industrial hygiene consulting company, he oversaw and managed various asbestos inspection and abatement related contracts with the NYCSCA and the New York City Board of Education.

- Performed Indoor Environmental Quality and microbiological contamination surveys and prepared site specific health and safety plans.
- Developed and taught New York State approved asbestos training courses.

**SPECIALIZED TRAINING**

- OSHA 40-Hour Hazardous Waste Site Operations and Emergency Response Training
- OSHA 8-Hour HAZWOPER Supervisor Training
- OSHA 30-Hour Construction Safety Training
- OSHA 10-Hour Construction Outreach Training

**PROFESSIONAL SOCIETIES AND MEMBERSHIPS:**

- American Industrial Hygiene Association (AIHA)
  - Past-Chair, Indoor Environmental Quality Committee (2013-2014)
  - Editor, E-Cigarettes in the Indoor Environment White Paper (2013-2014)
  - Editor, PCBs in the Built Environment White Paper (2012-2014)
  - Member, *Legionella* Project Team (2014- )
  - Member, Facts about Mold Project Team (2011-2013)
  - Past-Chair (2005-2006), Biosafety and Environmental Microbiology Committee
- American Society of Safety Engineers (ASSE)
- American Conference of Governmental Industrial Hygienists (ACGIH)
- Indoor Air Quality Association (IAQA)

**HONORS/AWARDS:**

- AIHA Fellow, 2012
- AIHA Kusnetz Award, 2001

# JOHN S. BUTZ, RLA
## Partner in Charge / Lead Designer

### Education
Bachelor of Landscape Architecture
SUNY, College of Environmental Science and Forestry, Syracuse University, New York, 1979

BS Environmental Science
SUNY, College of Environmental Science and Forestry, Syracuse University, New York, 1978

Real Estate and Investment Analysis Program
New York University, New York, 1985

### Active Registration
Registered Landscape Architect:
State of New York #1024, 1986

### Professional Memberships
American Society of Landscape Architects - Member since 1987
Sports Turf Managers Association
Synthetic Turf Council Charter Member

JOHN S. BUTZ is a Registered Landscape Architect with over thirty five years of diverse experience in analysis, planning, design, and project management of a wide range of site development projects. Mr. Butz has extensive experience in outdoor sports facility planning, design and expertise in sports turf (natural and synthetic) and resilient track systems. As senior partner in the firm, Mr. Butz establishes the firm's standards for client relations, quality control and adherence to project budget and schedule.

Mr. Butz is an active member of the Sports Turf Managers Association, a charter member and member of the advisory board of the Synthetic Turf Council, and a co-author of the 'Suggested Guidelines for the Essential Elements of Synthetic Turf Systems.' Projects include parks and open space, urban design and streetscapes, waterfront development, both public and private housing, and sports and recreation. As Principal in Charge of the "As– Needed" Landscape Architectural Design Excellence contract for New York City Department of Parks and Recreation, Mr. Butz has delivered over $100 million in capital construction projects since 2007 alone. Previously he provided design, contract documentation and project management for over 50 NYC parks projects.

### Selected Project Experience
NYC Department of Parks & Recreation "As-Needed" Design Services and Inspection Services - Citywide, New York, NY
NYC Department of Parks & Recreation
Role: Principal in Charge
Design Services: More than $80 million in capital projects have been designed by ABB for this most recent contract which included park and playground reconstructions athletic fields, and general site and landscape improvements.
Inspection Services: ABB provided full-time construction administration and site inspection services for over $100 million of site development for NYC DPR throughout the five boroughs. Projects have included both capital construction and multi-site contracts such as the PlaNYC schoolyards initiative, sidewalks and street trees, invasive species eradication and reforestation.

Maurice Park Ballfields - Queens, NY
NYC Department of Parks and Recreation
Role: Principal in Charge / Lead Designer
This project includes the 180,000 SF conversion of four natural turf baseball and softball fields into a multi-use synthetic turf field designed for year-round recreational use. The field underdrainage system was designed to convey stormwater into an existing retention system. Environmental testing results required special handling and disposal of existing soil as contaminated, non-hazardous material.

East River Park, 6th Street Soccer Field - Manhattan, NY
NYC Department of Parks and Recreation
Role: Principal in Charge / Lead Designer
The project includes the design of a high performing athletic field underdrainage system that addresses the need for storm resiliency in order to better prepare the field for storm surge events. This work will involve complete removal of the existing synthetic turf field, subbase material (deemed unsuitable for adequate drainage), existing storm drainage piping and basins as well as selective removal of the asphalt base for the perimeter track in areas of significant settlement.

Scarangella Ballfields

Fordham University

Hudson River Park

Riverbank State ParK

PlaNYC Asphalt to Turf Conversion - Citywide, New York City
Department of Parks & Recreation
Role: Principal in Charge / Lead Designer
This PlaNYC project called for the conversion of twenty-two asphalt sports fields into multi-use synthetic turf fields designed for intense recre- ational use. As part of the conversion, all fields' stormwater systems were designed to greatly reduce site discharge to the overburdened city sewer system. The synthetic turf systems specified were the latest generation of products which address the on-going environmental and health concerns that are being heavily debated throughout the country.

Scarangella Ballfields - Brooklyn, NY NYC
Department of Parks & Recreation Role:
Principal in Charge / Lead Designer
This project converted two existing natural turf ballfields to a multi- purposed synthetic turf field. In addition to softball and little league programming, the new field accommodated soccer and the intense use generated by this sport. Implementing the design required a delicate approach as the perimeter of the site was lined with many large trees that needed to be preserved and protected. This led to close design coordination with DPR foresters. Root pruning was performed during the design phase in order to provide the recommended recovery period prior to construction.

Highbridge Ballfield
NYC Department of Parks & Recreation, Manhattan, NY Role:
Project Manager / Landscape Architect
The field design for Highbridge Ballfield 'flipped' the existing field orientation in order to take advantage of the uphill grades, maximize the ballfield grading and allow for the creation of a natural stone amphitheater that matched the existing rock outcroppings on site.

Van Cortlandt Parade Ground - Bronx, NY
New York City Department of Parks & Recreation
Role: Principal in Charge / Lead Designer
This project's scope was for the reconstruction of over sixty acres of natural turf multi-use sports fields and over a mile of perimeter cross- country track. A major design element was for the relocation of the ballfields to the north end of the site, nestling them into the adjacent hillside and reducing the visual impact of the backstops, previously located in front of the Van Cortlandt Mansion. Minimizing the disruption to the highly-demanded fields required several levels of coordination with many community organizations and leagues, leading to the project being constructed into two separate phases.

Bundled Ballfields - Bronx, NY
NYC Department of Parks & Recreation
Role Principal in Charge / Lead Designer
This project included four sites – Soundview, Bronx River Park, Trojan Field and Shandler Ballfields, located in various parks throughout the Bronx. The scope of work included the reconstruction of natural turf sports fields, synthetic multi-use fields and a skate park, along with passive recreation areas. The designs focused on providing enhanced surface grading, amended soils structure, under drainage systems and new automatic irrigation systems.

# PETER CRAWFORD, RLA
## LEED BD+C
## Project Manager

### Education
Bachelors in Landscape Architecture,
Michigan State University
East Lansing, MI, 2008

### Active Registration
Registered Landscape Architect:
State of New York #02465, 2014
LEED Accredited Professional, USGBC

### Skills
Proficient in AutoCAD, Adobe Creative Suite, MicroStation, Microsoft Office Suite and SketchUp

### Other Experiences
PELA Design, Inc.*
Baltimore, MD
Junior Landscape Architect, 2011-2012

MC Smith Associates
East Grand Rapids, MI
Associate, 2006-2010

PETER T. CRAWFORD is a Registered Landscape Architect and LEED Accredited Professional. Mr. Crawford has worked on projects all along the east coast and across the state of Michigan for the past seven years. He has an artistic design sense with a strong technical skill set that he has successfully applied to a number of projects during his time at ABB. Mr. Crawford has worked on parks, athletic fields/facilities, mixed use, transportation, institutional, waterfronts, and environmental/sustainable design. He has extensive experience working with state and local departments on numerous park projects ranging in scale and type. He has played a major role in current DPR projects at East River Park and Riverside Park South in Manhattan, Lindower Park in Brooklyn, and Parque de los Ninos, Agnes Haywood Playground and Mt. Hope Garden in the Bronx, in addition to sports field improvements at St. John's University in Queens.

### Selected Project Experience
Maurice Park Ballfields - Queens, NY
NYC Department of Parks and Recreation
Role: Project Manager / Landscape Architect
Currently managing this project that includes the 180,000 SF conversion of four natural turf baseball and softball fields into a multi- use synthetic turf field designed for year-round recreational use. Environmental testing results required special handling and disposal of existing soil as contaminated, non-hazardous material.

East River Park, 6th Street Soccer Field - Manhattan, NY
NYC Department of Parks and Recreation
Role: Project Manager / Landscape Architect
Currently managing the reconstruction of the synthetic turf soccer field, perimeter track, and field events. The project includes design of a high performing athletic field underdrainage system that addresses the need for storm resiliency to better prepare the field for storm surge events. This work will involve complete removal of the existing synthetic turf field, subbase material (deemed unsuitable for adequate drainage), existing storm drainage piping and basins as well as selective removal of the asphalt base for the perimeter track in areas of significant settlement.

Parque de los Ninos - Bronx, NY
NYC Department of Parks and Recreation
Role: Project Manager / Landscape Architect
Currently managing this natural turf ballfield renovation and construction of a new 200M running track and synthetic turf mini soccer field. The project involves retrofitting a new running track and soccer field into a fenced in area which currently has three natural turf ballfields. The reconstruction of (2) new/renovated ballfields will involve perimeter fence and backstop reconstruction, new clay infield and topsoil for natural turf areas, and field amenities necessary.

Riverside Park South, Manhattan, NY
NYC Department of Parks and Recreation
Role: Landscape Designer
Served as design support staff and led the assembly of a model showing spatial relationships between program elements and existing site conditions. The project intent is to provide expanded programming and improvements within the Phase 1 section of Riverside Park South completed in 2000. Work will include reconstruction of an existing turf

ball field, improvement of circulation on the existing Manhattan Greenway and augmenting areas of active recreation under Miller Highway. The space is programmed to serve teenagers and young adults with a street style skating area, fitness elements and informal seating, but also caters to adult park users who visit for active recreation purposes. The existing basketball courts and handball walls will be relocated and the area developed as a multi-use informal play and climbing area for children.

Lindower Park - Brooklyn, NY
NYC Department of Parks and Recreation
Role: Project Manager / Landscape Architect
Managed this natural turf ballfield reconstruction project from schematic design through final contract documents. Coordinated with MEP Engineering consultant, irrigation consultant and the DPR project manager to provide a state of the art, low maintenance irrigated natural turf ballfield. Performed extensive research in determining the best and most innovative natural turf seed mixture and irrigation system to be self sustaining under DPR maintenance and supervision.

Pier 40 Ballfield Restoration - Manhattan, NY
Hudson River Park Trust
Role: Project Manager / Landscape Architect
This project involves reconstruction of both courtyard level and rooftop deck multi-use synthetic turf fields at Pier 40. A thorough existing conditions assessment was performed to investigate current flaws of the existing fields that sit on a structural roof deck with drains. Mr. Crawford has relied on his experience working with various types of sports fields and underdrainage systems to redesign the appropriate system for these unique and highly used multi-sport fields at Pier 40.

Brooklyn Tech High School Athletic Field - Brooklyn, NY
School Construction Authority
Role: Project Manager / Landscape Architect
Currently managing this complete reconstruction of an existing synthetic turf field, home to several high school athletic teams including football, soccer and lacrosse. This project involves synthetic turf field replacement and necessary amendments to existing aggregate base material and modifications and connections to existing sports field underdrainage and stormwater detention systems as well as redesign of the site to incorporate a new 800 seat bleacher system, restroom/ concessions facility, entry plazas and sports field lighting. The design also allows for a future 7,000 square foot field house building.

St. John's University Campus Athletic Facilities (Multiple Projects) - Queens, NY
St. John's University
Role: Project Manager / Landscape Architect
Served various roles on a number of projects on campus including Belson Stadium (soccer), Jack Kaiser Stadium (baseball) and DaSilva Memorial Field (lacrosse/track and field). These projects involved fields and facilities upgrades including synthetic turf and natural turf field replacement/reconstruction, resilient track resurfacing, feasibility study for additional bleacher capacity and existing conditions assessments and recommendations for improvements. All facilities on campus are held to high standards and must comply with rigid guidelines set forth by the NCAA.

# APPENDIX C

# SUBCONTRACTOR QUALIFICATIONS

**Landscape Architect Services - Abel Bainnson Butz, LLP (ABB)**

Abel Bainnson Butz, LLP (ABB) has been subcontracted by TRC to provide Landscape Architecture Services. ABB was selected for several reasons. ABB has maintained an "As-Needed" contract with NYC Parks from 1995 to present day. In 2011, ABB was awarded a $4 million dollar design contract from Parks for reconstruction or construction of Park facilities located throughout the five boroughs including playgrounds, natural turf ball fields, synthetic turf conversions, and general site reconstruction. Services provided include scope preparation, master planning, schematic, preliminary, and final design, community and agency compliance, cost estimating, specification preparation, bid assistance and construction administration services. Specifically, ABB served as the lead consultant for DPRs "Asphalt to Turf" project which included upgrade of twenty-two asphalt ball fields, at eighteen sites, located throughout the five boroughs of NYC, replacing the dated and deteriorated asphalt with durable synthetic turf playing fields. ABB has over 40 years of experience and is a nationally recognized leader in sports facilities design. ABB's office is located in Manhattan making them easily accessible to the project Site, DPR, and EPA offices. TRC and ABB worked together successfully on the synthetic turf sports field at the Queens West Development – Stage 2 Site in Long Island City.

**Geotechnical Engineering - Oweis Engineering Inc. (OEI)**

Oweis Engineering Inc. (OEI) has been subcontracted by TRC to provide geotechnical services. OEI has provided geotechnical engineering services to ABB on several DPR projects. OEI is an engineering consulting company that provides geotechnical, environmental and geo-environmental engineering services for various infrastructure facilities including industrial and residential buildings, dams, highways, bridges, tunnels, rail and subway systems, landfills and many other civil engineering facilities. OEI has consistently provided ABB with sound geotechnical services for DPR. OEI's office is located in Cedar Knolls, NJ.

**Mechanical/Electrical/Plumbing Engineering - DVL Consulting Engineers, Inc. (DVL) (MBE)**

DVL Consulting Engineers, Inc. (DVL) has been subcontracted by TRC to provide mechanical, electrical and plumbing engineering services. DVL has a proven track record of providing value engineering services to ABB on DPR projects. Established in October 1990, DVL Consulting Engineers, Inc. is a multifaceted Engineering Firm, registered and certified by various governmental agencies to provide Mechanical, Electrical, Plumbing and Fire Protection engineering services and specializing in Green and Sustainable Buildings Design for a variety of facilities throughout the Northeast.

DVL is a firm of design professionals dedicated to a team effort between Owner, Architect and Engineer and views its role as a partner in the construction process. DVL's goal is to provide expert engineering solutions while adhering to budget criterions and schedule restraints, as well as striving to maintain the aesthetic value of structures that have historical significance to the community and those that aim to modernize the landscape. All of DVL's work is performed under the direct supervision of a Principal of the firm who assures all client requirements are met, from the project's inception, to its completion.

DVL's professional services include plans and specifications, systems evaluations, codes and standards, master planning, engineering reports, economic analysis, construction field reports, value engineering, and feasibility studies, and construction administration services. DVL's office is located in Manhattan making them easily accessible to the project Site and DPR offices.

**Land Surveying Services - Muñoz Engineering and Land Surveying, PC**

Muñoz Engineering and Land Surveying, PC has been subcontracted by TRC to perform land survey services. Muñoz has a proven track record of providing consistently high quality land surveying services to ABB on DPR projects. Founded in 1983, Muñoz is licensed to practice engineering and land surveying in New York

State. Muñoz provides fully equipped surveyors, utilizing state-of-the art survey equipment and software. In addition to Total Stations, automatic levels and data collectors, Muñoz also uses Global Positioning System (GPS) and HDS – High Definition Surveying equipment. Licensed as a land surveyor in New York, the firm provides design surveys and utility surveys, Right-of-Way surveys, property surveys, architectural surveys and special surveys for highway and bridge design, rail projects, new construction, and renovations of buildings and facilities.

**Laboratory Services (SGS Accutest)**

SGS Accutest (Accutest) has been subcontracted by TRC to provide laboratory services. This high-quality laboratory was selected to match the stringent data quality objectives required for this project. TRC has successfully subcontracted laboratory services to Accutest on multiple large and complex projects.

Accutest Laboratories is a nationwide environmental testing laboratory that has delivered quality data for over 55 years. Founded in 1956, Accutest is one of the nation's largest environmental testing laboratories combining advanced technology and experienced personnel. Headquartered in Dayton, New Jersey, Accutest operates from state-of-the-art, integrated laboratories in New Jersey, Massachusetts, Florida, Texas, Louisiana, Colorado, and California. The Company operates over 220,000 square feet of total laboratory space. Accutest also maintains a fully-staffed Service Center in New York.

**Drilling Services (LAWES)**

Land, Air, Water Environmental Services, Inc. (LAWES) has been subcontracted by TRC to provide drilling services. TRC has successfully subcontracted similar drilling services to LAWES for many past projects. LAWES is familiar with NYCDEP Office of Green Infrastructure (OGI) management practices and has performed numerous subsoil permeability tests in support of NYCDEP's Green Infrastructure Projects.

LAWES performed drilling and soil sampling services at 249 locations in the Newtown Creek Basin area in Brooklyn. LAWES supplied crews and drill rigs to obtain subsurface information including soil samples for laboratory analysis. Permeability testing was also performed at various depths for potential Bioswale locations. All borings had to be properly abandoned to grade and monitored over a one month period from closure to insure that there was no settling of the restored drilling locations.

Since 1988 LAWES has specialized in subsurface investigation. LAWES operates a fleet of rigs which can perform a variety of drilling techniques, including direct push sampling and injection services via limited access tracked units. LAWES also operates vactron units to pre-clear excavations to avoid subsurface conflicts prior to investigations. LAWES' crews are OSHA 40-hour, OSHA 10-hour, Loss Prevention Systems (LPS), and API WorkSafe trained.